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HENODUS

Almost as wide as it was long, *Henodus* paddled around the Triassic seas like a floating frisbee.

About 200 million years ago, the shallow seas that covered what is now Europe were very crowded. Clams and limpets, periwinkles and oysters all made their homes on rocks covering the sea beds.

NEW GENERATIONS

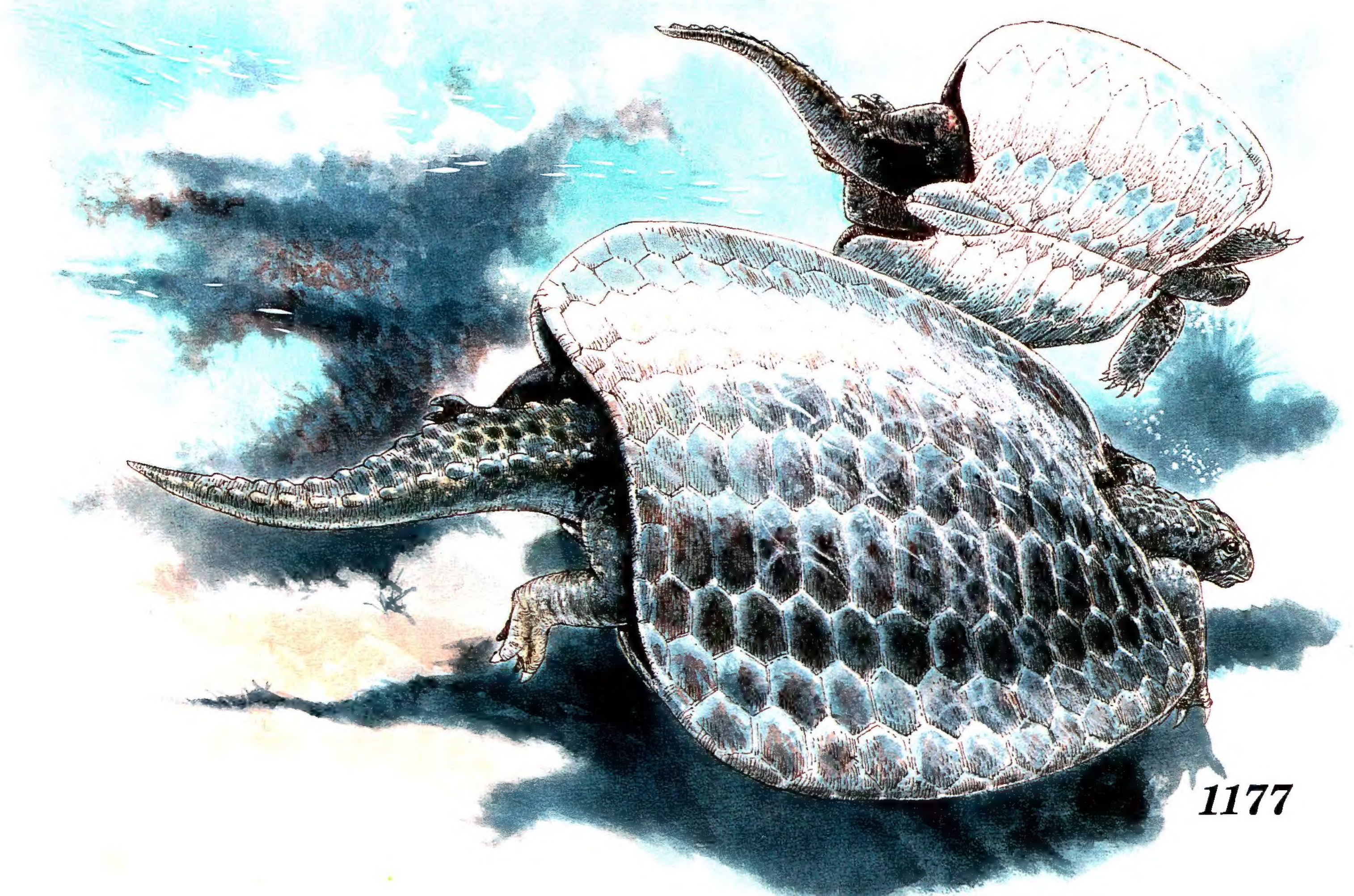
On land, early crocodiles, flying reptiles and dinosaurs appeared. Some reptiles adapted to life in the sea and searched for their food below the water's surface.

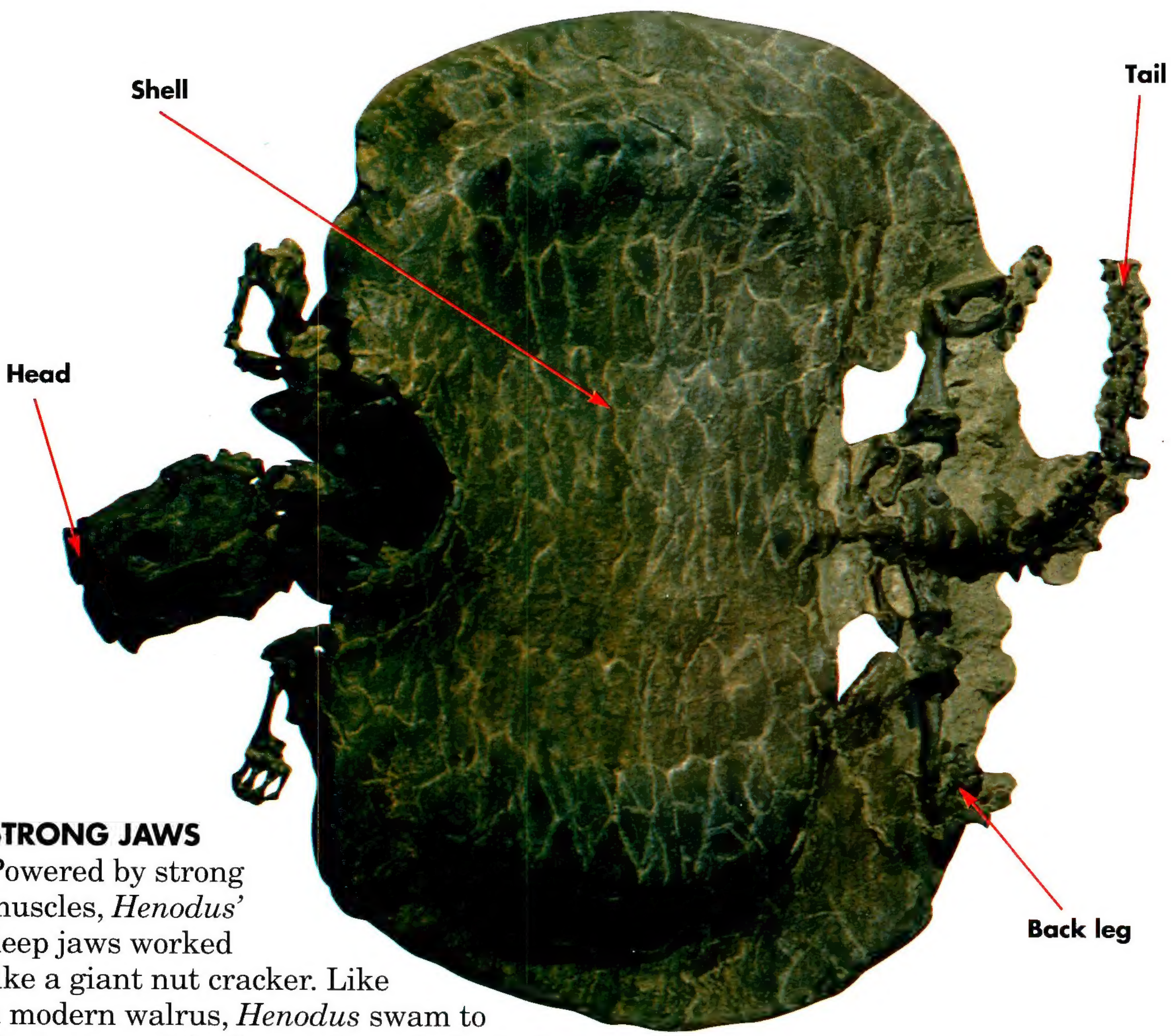
BROAD BODY

Henodus was the last of the placodonts, a family of armoured, marine (sea) reptiles. It was just under 1m wide and had a broad, flat body, making it look like a squashed turtle! Although it was shaped like the marine turtles of today, with a similar but flatter shell, *Henodus* did not have the same sort of lifestyle.

WELL-SHELLED

Henodus' shell was like a bony shield of armour covering its round body. Only its head, small arms and legs, and tail were not shielded by this tough shell. As *Henodus* swam in the seas in search of food, its bony shell protected the reptile from predators.

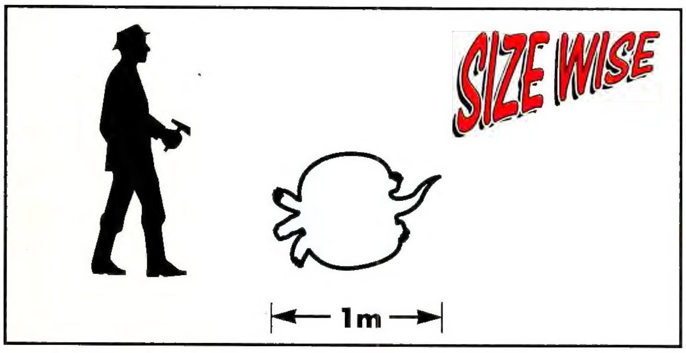




Unlike the shell of today's turtle, *Henodus'* shell probably did not protect its limbs, head and tail.

STRONG JAWS

Powered by strong muscles, *Henodus'* deep jaws worked like a giant nut cracker. Like a modern walrus, *Henodus* swam to the bottom of shallow waters. It plucked molluscs from the sea floor with its horny, toothless beak. It crunched through shells using flattened back teeth. Bones in the roof of its skull and lower jaws added to the crushing force.



MONSTER FACTS

- **NAME:** *Henodus* (he-no-dus) means 'flat tooth'
- **GROUP:** marine reptile
- **SIZE:** 1m long
- **FOOD:** molluscs from the sea bed
- **LIVED:** about 200 million years ago during the Late Triassic Period in the shallow, inland seas of southern Germany

FLIPPER-LIKE LIMBS

Henodus' short arms and legs poked out from beneath the front and back of its shell. On each limb, the fingers, or toes, were joined by a thin layer of skin which gave them a webbed look. *Henodus* probably used its webbed fingers and toes like little paddles or flippers to swim faster.

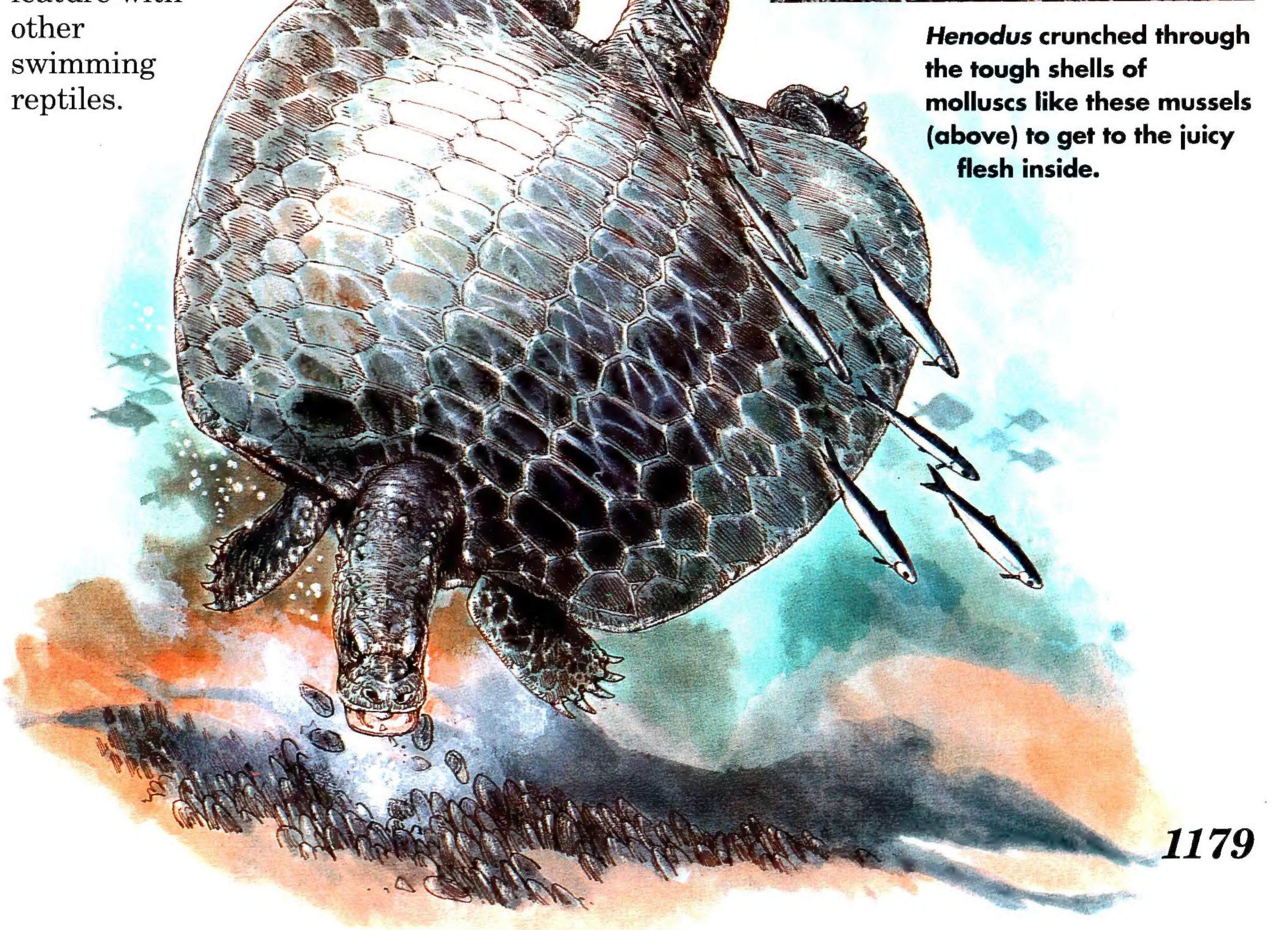
TAIL TO HEAD

Henodus had a short, flattened tail which it flexed from side to side as it swam. At the other end of its body, its small head and tiny eyes peeped out from beneath its shell. *Henodus* probably could not draw its head and limbs in under its bony armour in the way that some turtles do when attacked. On either side of its head, high up on the temples, *Henodus* had a hole in its skull. It shared this special feature with other swimming reptiles.

What is? A MOLLUSC

Molluscs form the second largest group in the animal kingdom. There are about 100,000 species including clams and snails, oysters, octopuses and cuttlefishes. Some molluscs have a shell which acts as a protective coat. Others, like slugs, have no shells. They are invertebrates (animals without backbones) and live in water and on land, often on rocky coasts.

Henodus **crunched through the tough shells of molluscs like these mussels (above) to get to the juicy flesh inside.**



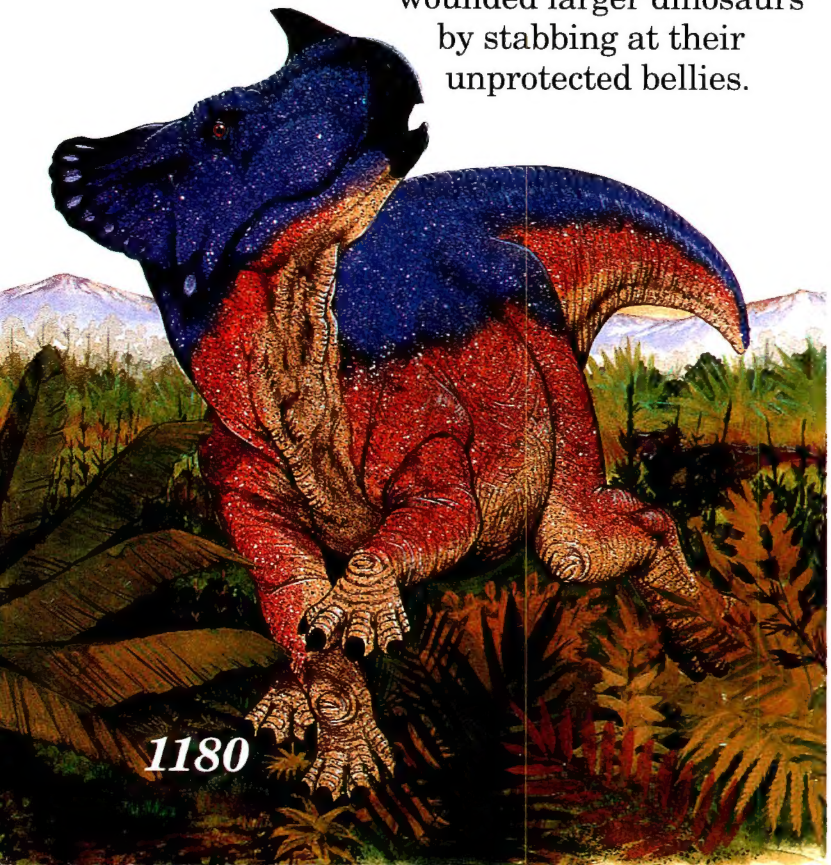
MONTANOCERATOPS

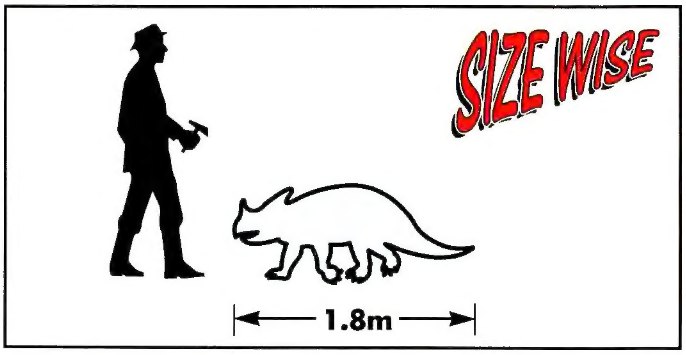
***Montanoceratops* crashed through the undergrowth like a little, charging rhinoceros.**

Like other horn-faced dinosaurs, *Montanoceratops* lived at the end of the Age of the Dinosaurs. *Montanoceratops* was named after the state of Montana, in North America, where many exciting discoveries have been made among Cretaceous rocks.

DIFFERENT – BY A NOSE!

Montanoceratops was similar in size and shape to its Mongolian relative, *Protoceratops*. Both creatures had bony neck frills and walked on four, sturdy legs. But unlike *Protoceratops, Montanoceratops* had a short nose horn – it probably used this to deliver sideways blows to its enemies. It may even have wounded larger dinosaurs by stabbing at their unprotected bellies.





MONSTER FACTS

- **NAME:** *Montanoceratops* (mon-tan-oh-serra-tops) means 'horned face from Montana'
- **GROUP:** dinosaur
- **SIZE:** about 1.8m long
- **FOOD:** plants
- **LIVED:** about 80 million years ago in the Late Cretaceous Period in Montana, USA

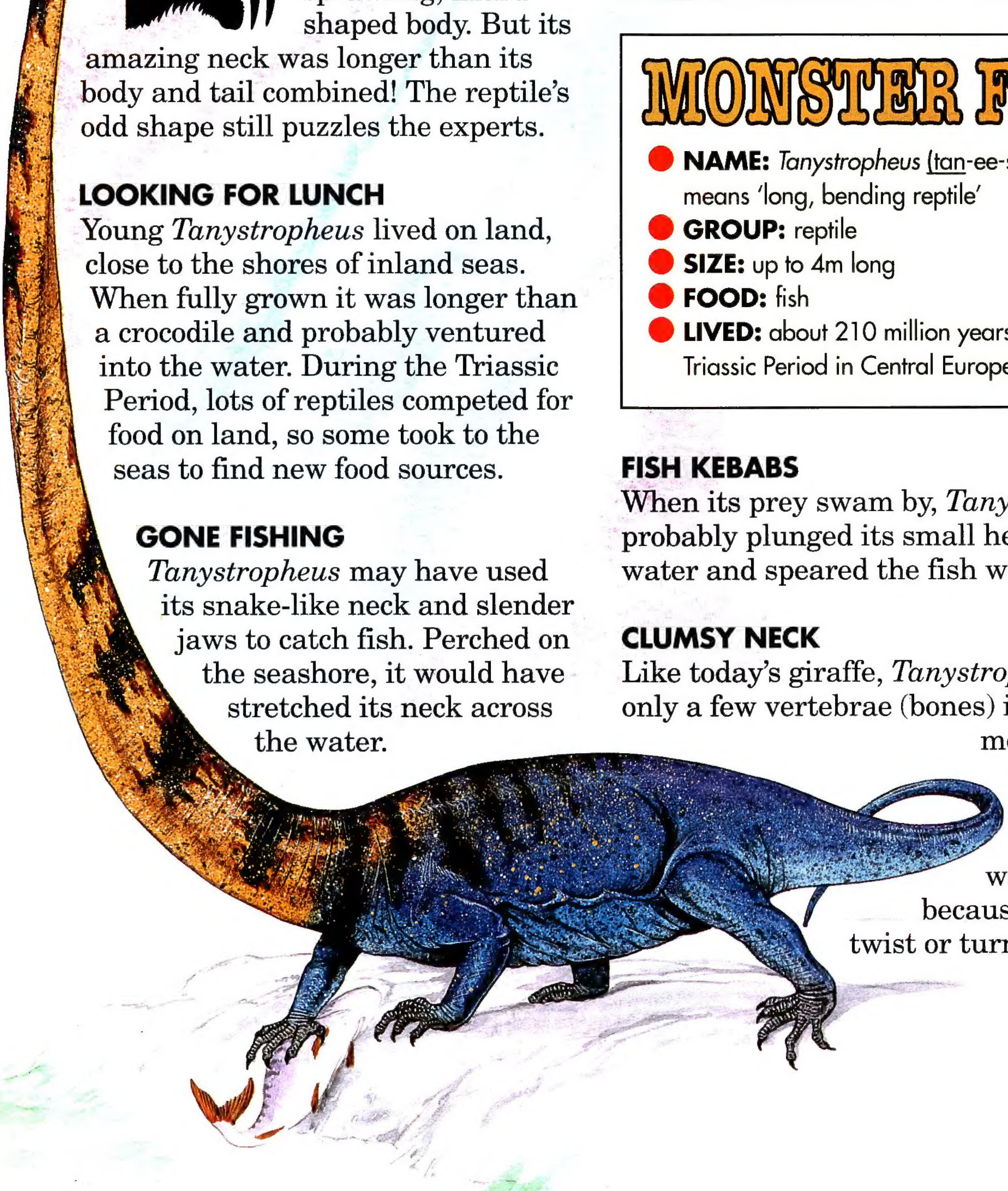
TWIG SLICER

Montanoceratops' strong jaw muscles gave it a powerful bite. Its teeth sliced through twigs and tough vegetation like scissors. As it chopped up juicy plants, *Montanoceratops'* fleshy cheeks stopped the food from falling out of its mouth.

LEADER OF THE PACK

The frill on *Montanoceratops'* neck was not just for decoration. In a herd, the dinosaur with the largest neck frill probably took the lead and had first choice of a mate. *Montanoceratops* had small windows (holes) in the bone of its frill which made the frill lighter and easier to carry.

TANYSTROPHEUS



Tanystropheus had an extraordinarily long neck which it used like a fishing rod.

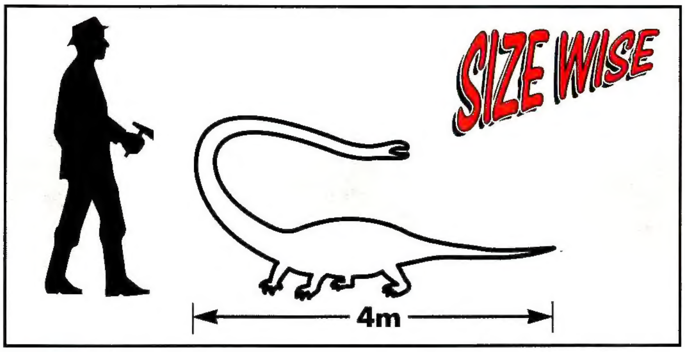
From the neck down, *Tanystropheus* had a sprawling, lizard-shaped body. But its amazing neck was longer than its body and tail combined! The reptile's odd shape still puzzles the experts.

LOOKING FOR LUNCH

Young *Tanystropheus* lived on land, close to the shores of inland seas. When fully grown it was longer than a crocodile and probably ventured into the water. During the Triassic Period, lots of reptiles competed for food on land, so some took to the seas to find new food sources.

GONE FISHING

Tanystropheus may have used its snake-like neck and slender jaws to catch fish. Perched on the seashore, it would have stretched its neck across the water.



MONSTER FACTS

- **NAME:** *Tanystropheus* (tan-ee-stro-fie-us) means 'long, bending reptile'
- **GROUP:** reptile
- **SIZE:** up to 4m long
- **FOOD:** fish
- **LIVED:** about 210 million years ago in the Mid Triassic Period in Central Europe and Israel

FISH KEBABS

When its prey swam by, *Tanystropheus* probably plunged its small head under the water and speared the fish with its teeth.

CLUMSY NECK

Like today's giraffe, *Tanystropheus* had only a few vertebrae (bones) in its neck but most of them were very long. Its movements were clumsy because it could not twist or turn easily.

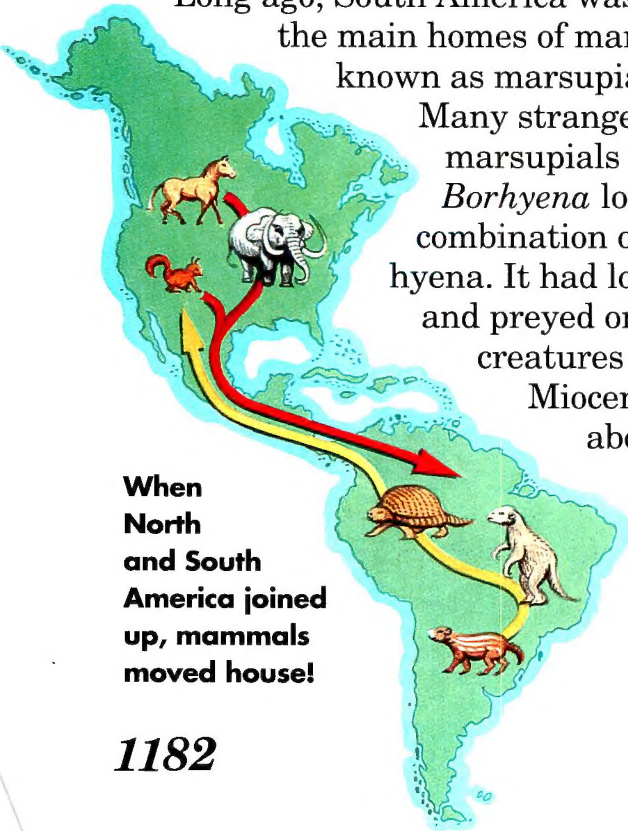
South American

Today, South America is one of the world's richest and most wondrous places for animals. And so it was in prehistoric times too.

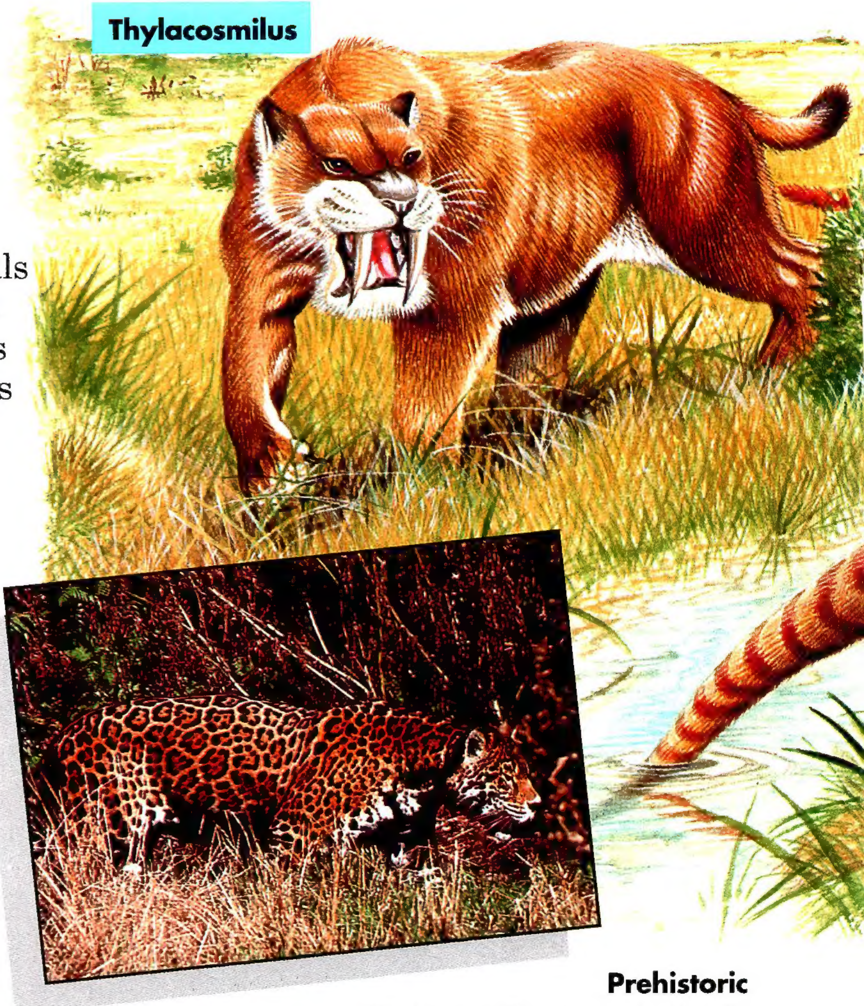
How did South American mammals come to be so special? Like most land masses, South America has been drifting around the globe for millions of years. During Jurassic times, South America was joined to Africa but in the Cretaceous Period it drifted away. The Atlantic Ocean filled the gap and South America became a giant, floating raft. Separated from all other lands, its plants and animals lived and evolved in their own way. The mammals especially, became weird and wonderful creatures.

MARVELLOUS MARSUPIALS

Long ago, South America was one of the main homes of mammals known as marsupials. Many strange marsupials lived then. *Borhyena* looked like a combination of bear and hyena. It had long fangs and preyed on smaller creatures during the Miocene Epoch, about 20–10 million years ago.



When North and South America joined up, mammals moved house!

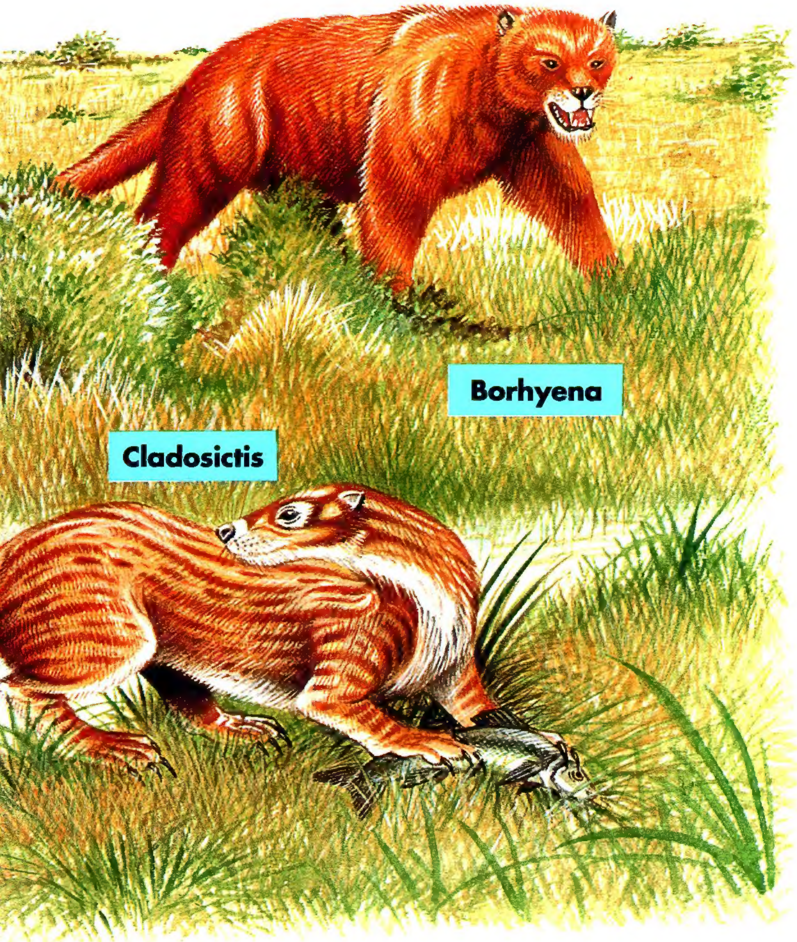


Prehistoric *Thylacosmilus* was similar in size to a modern jaguar (above).

SABRE-TOOTHED STABBER

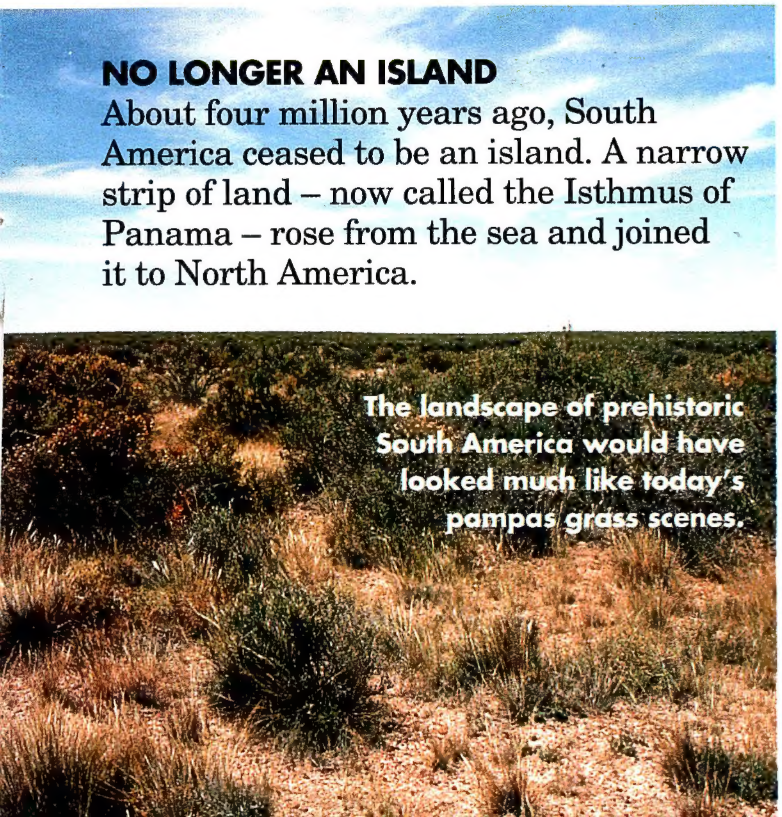
Thylacosmilus was a sabre-toothed marsupial cat, about the size of today's jaguar. Its long, curved upper fangs fitted into sheaths in the lower jaw, when they were not stabbing and ripping victims. *Thylacosmilus* lived a few million years ago, in the Pliocene Epoch. Much smaller, but just as fierce, was *Cladosictis*. About the size of a stoat, it chased small creatures such as mice, insects and lizards.

mammals



NO LONGER AN ISLAND

About four million years ago, South America ceased to be an island. A narrow strip of land – now called the Isthmus of Panama – rose from the sea and joined it to North America.



The landscape of prehistoric South America would have looked much like today's pampas grass scenes.

South America was home to many prehistoric marsupials but the opossum is now the only modern one there.

THE GREAT BATTLE

The land strip formed a bridge for animals to cross. North America had its own mammals, which were not marsupials, but placentals. These spread down into South America and were more successful than the marsupials. Gradually they took over and most of the marsupials died out.

LONE SURVIVORS

Today, the only marsupial survivors are the opossums (possums) and only one species, the Virginia opossum, has spread from South America into North America.

What is? A MARSUPIAL

A marsupial is an animal with a pouch – such as a kangaroo or opossum. Marsupial babies are born at a very early stage of development. Tiny and hairless, they crawl to the mother's pouch, which is called a marsupium. There they feed on milk and grow. There are 266 species alive today.

SOUTH AMERICAN PLACENTALS

South America was not only home to many marsupials in prehistoric times. Lots of placental mammals lived there too, but most of them were much bigger than animals in South America today. For example, 3m-long *Glyptodon* had armour-plates on its back like today's armadillo.

Modern armadillo

GREAT IDEA

The great naturalist Charles Darwin visited South America on his round-the-world voyage, in the 1830s. He brought the fossils of *Megatherium* and other giant mammals back to Britain. The fossils helped to give him the ideas about evolution for which he became world famous.

ANCIENT GIANT

Megatherium was a giant ground sloth which was 6m long. Like sloths of today, it had enormous, curved claws. But, unlike today's sloth, it weighed as much as an elephant, so it was too big to hang from branches! It probably reared up on its back legs to feed on leaves up in the trees.

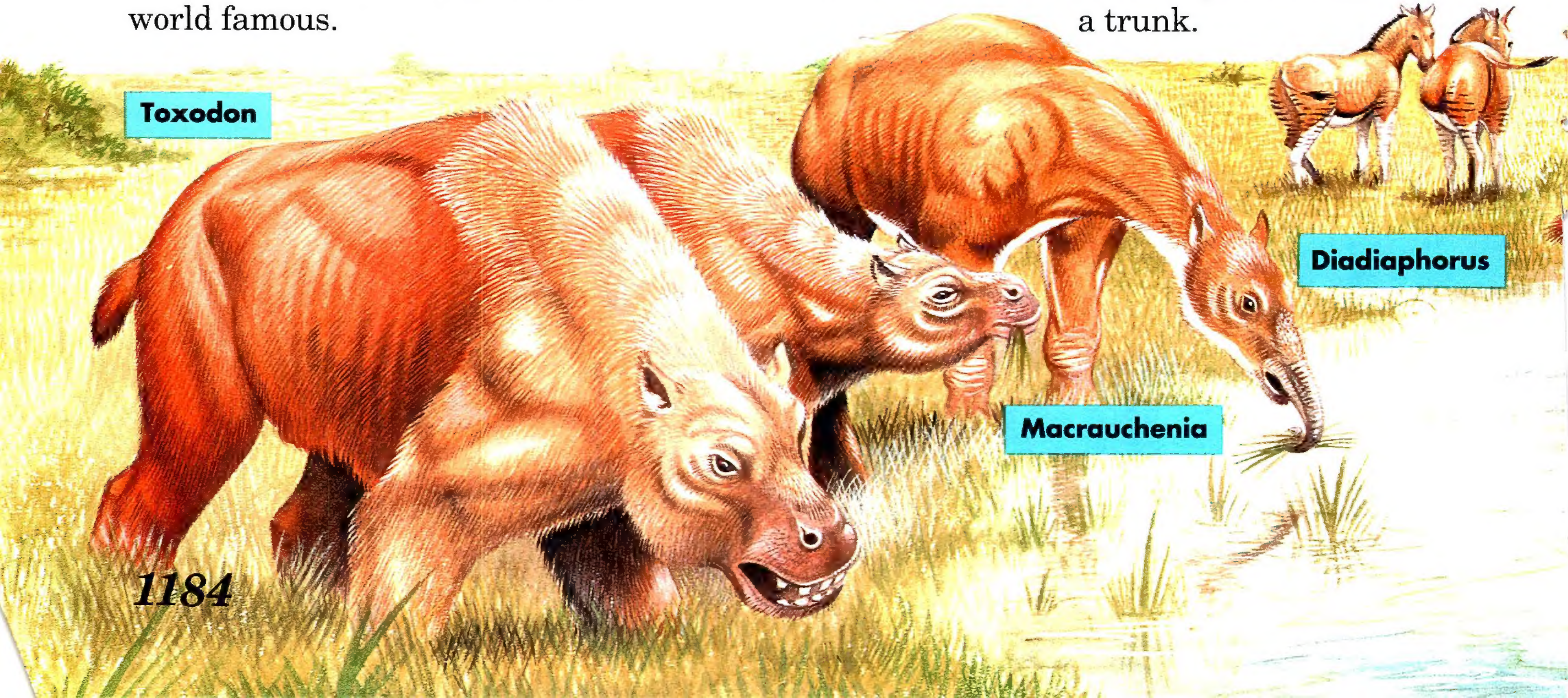
Sloth of today

HOOFED MAMMALS

South America had many ungulates, or hoofed mammals. One of the biggest was *Toxodon*. With nostrils, eyes and ears on the top of its head, it was like a hippopotamus – it could breathe, see and listen while almost submerged in water.

CAT AND MOUSE CREATION

Imagine an animal that looked like a cross between a cat and a mouse but which had hoofs. Its name was *Protypotherium* and it was about 50cm long. *Macrauchenia* was about 1.8m tall with a camel-shaped body. Its fossils show that it may have had a trunk.



HORSE OR GAZELLE?

Diadiaphorus was the shape of a horse but the size of a gazelle. This ungulate probably grazed on the tough grasses that covered parts of South America, from Miocene times onwards.

RAGING RODENTS

Rodents are gnawing mammals such as rats, mice, squirrels and beavers. South America has a wide variety today, including the capybara, the world's largest living rodent. In the past, rodents grew to even greater sizes.

THE TERRIBLE MOUSE

The fossils of *Telicomys* come from Pliocene rocks in Argentina. This 'terrible mouse' stood 1m tall and was shaped more like a hippopotamus or rhinoceros.

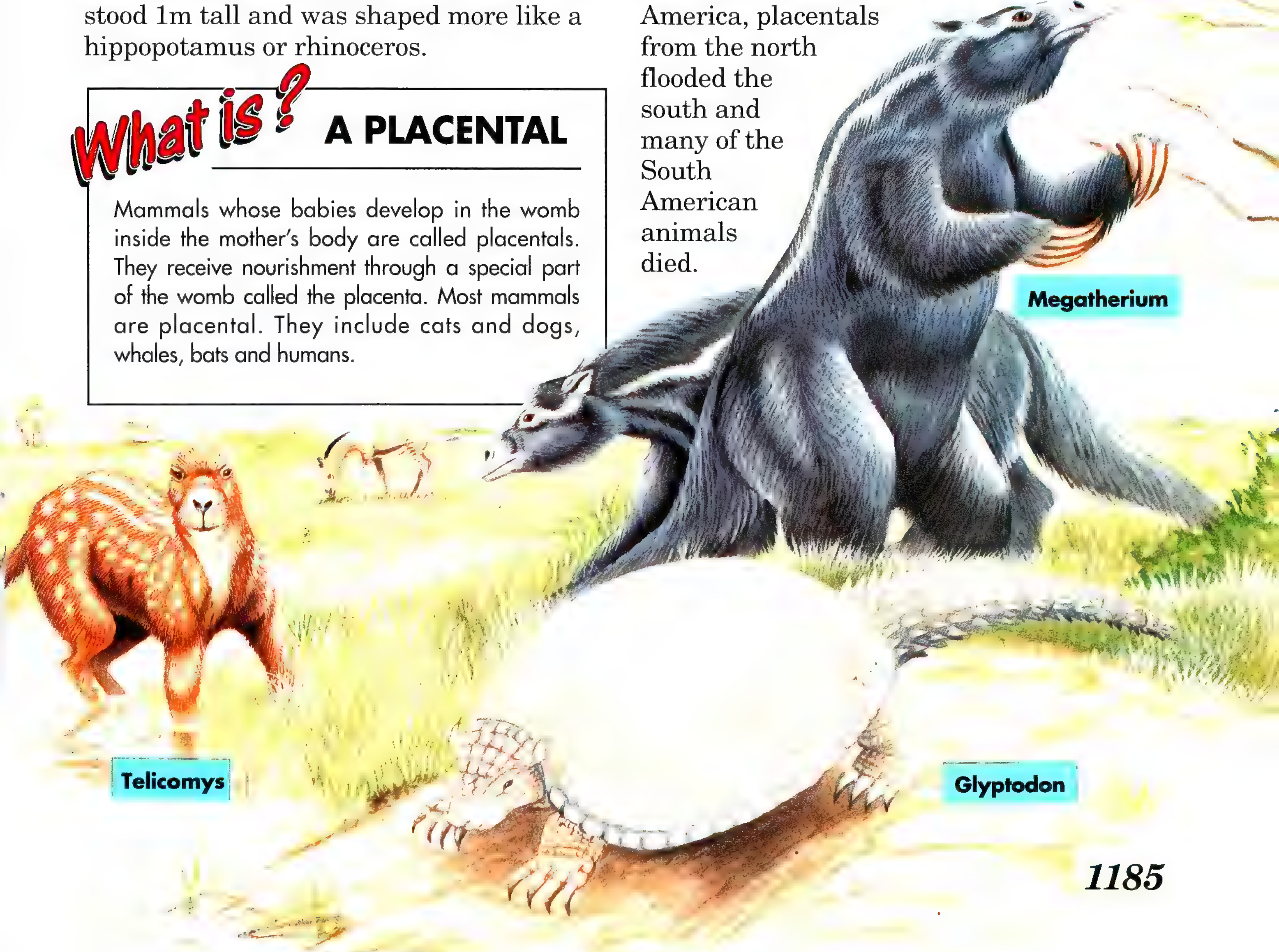
What is? A PLACENTAL

Mammals whose babies develop in the womb inside the mother's body are called placentals. They receive nourishment through a special part of the womb called the placenta. Most mammals are placental. They include cats and dogs, whales, bats and humans.

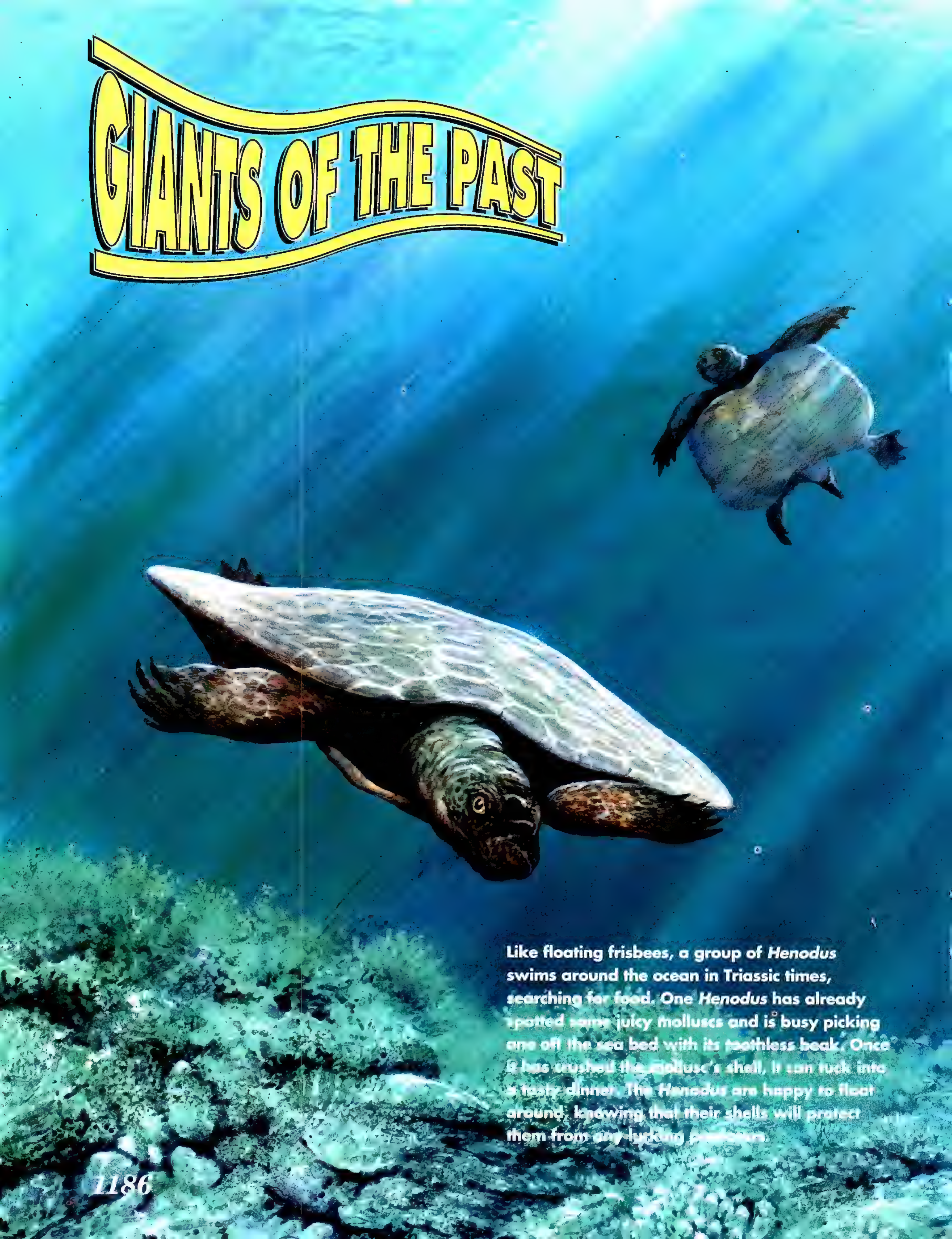
Modern mice

COMINGS AND GOINGS

Many animals appeared in South America in the Tertiary Period. They may have floated there on branches or island-hopped or flown! But when the land bridge joined North and South America, placentals from the north flooded the south and many of the South American animals died.

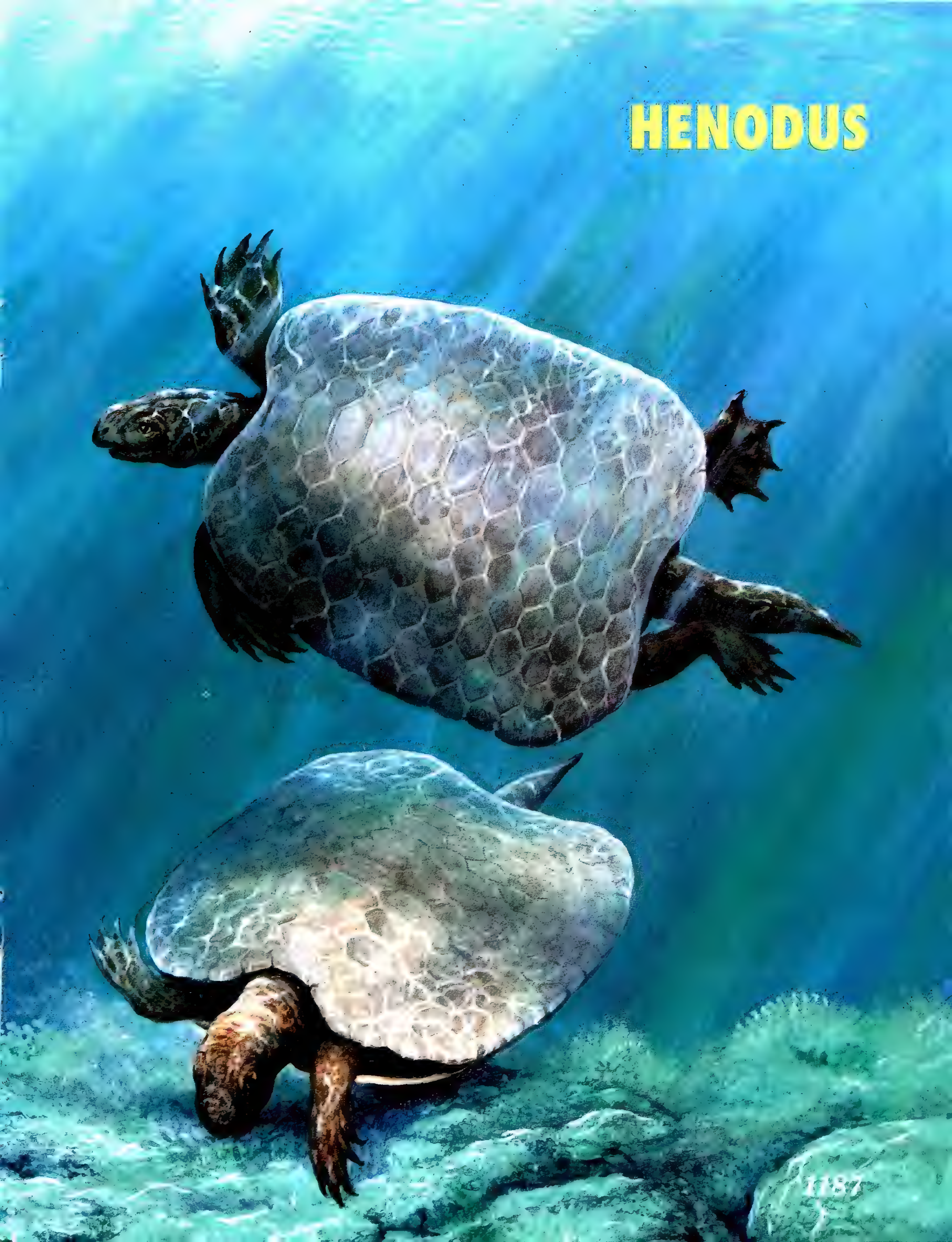


GIANTS OF THE PAST



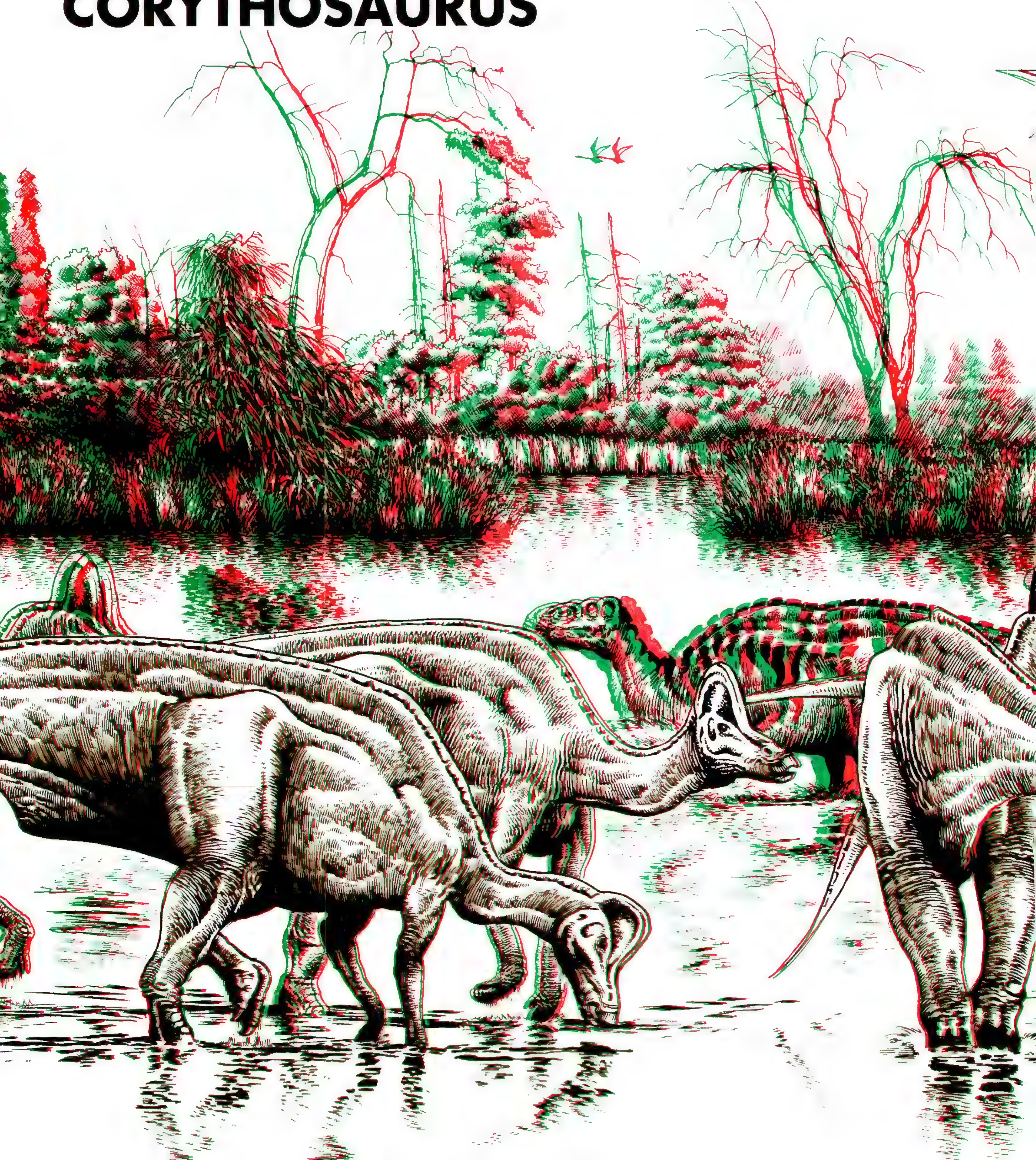
Like floating frisbees, a group of *Henodus* swims around the ocean in Triassic times, searching for food. One *Henodus* has already spotted some juicy molluscs and is busy picking one off the sea bed with its toothless beak. Once it has crushed the mollusc's shell, it can tuck into a tasty dinner. The *Henodus* are happy to float around, knowing that their shells will protect them from any lurking predators.

HENODUS

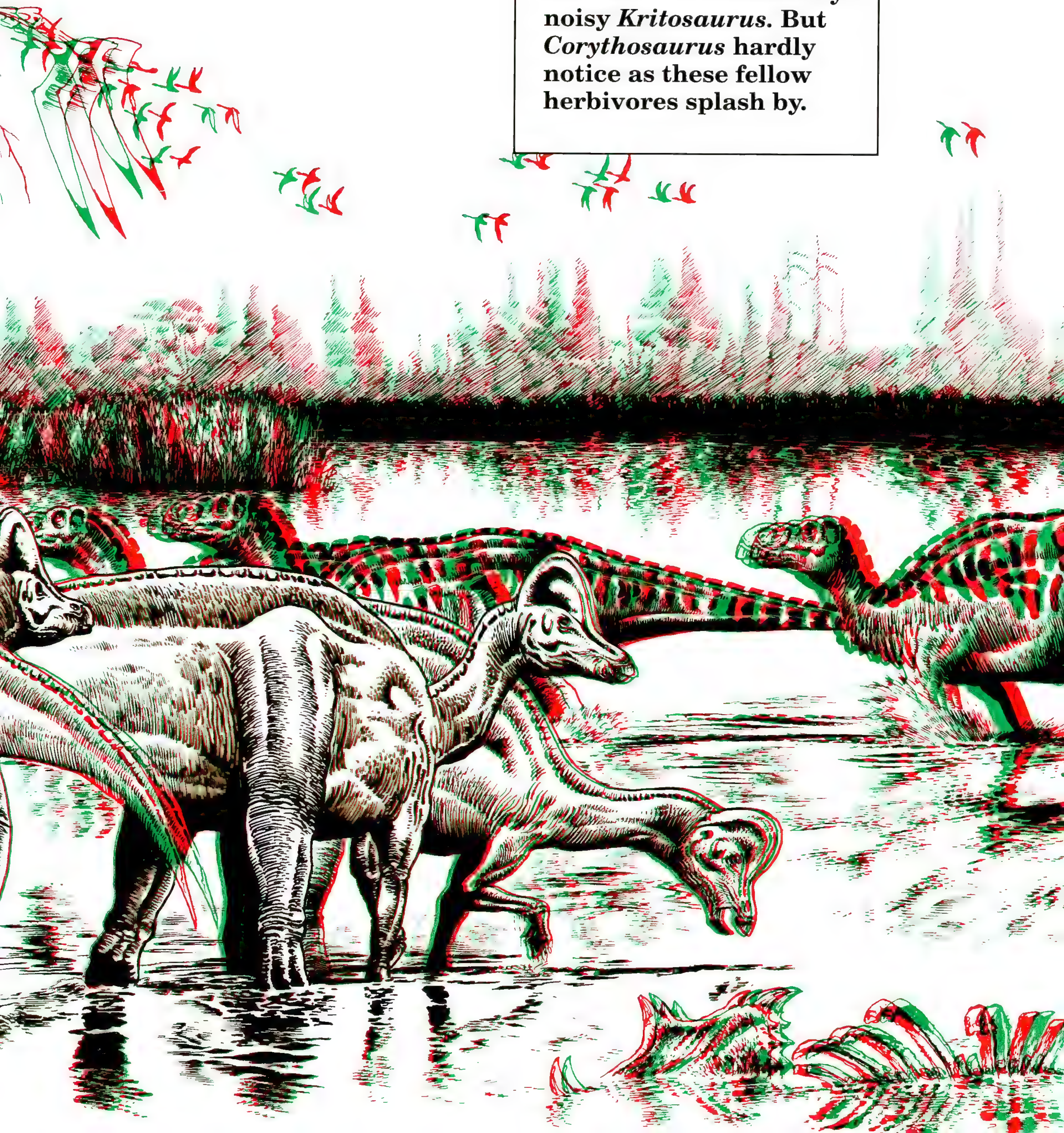


3-D Gallery 59

CORYTHOSAURUS



As pterosaurs soar over the Late Cretaceous landscape, a herd of *Corythosaurus* satisfies its thirst at a water hole. The peace is broken for a moment by noisy *Kritosaurus*. But *Corythosaurus* hardly notice as these fellow herbivores splash by.



How to spot a pterosaur

Pterosaurs had a lot in common with today's birds, but there were also many differences between them. Can you spot any by studying this *Pteranodon*?

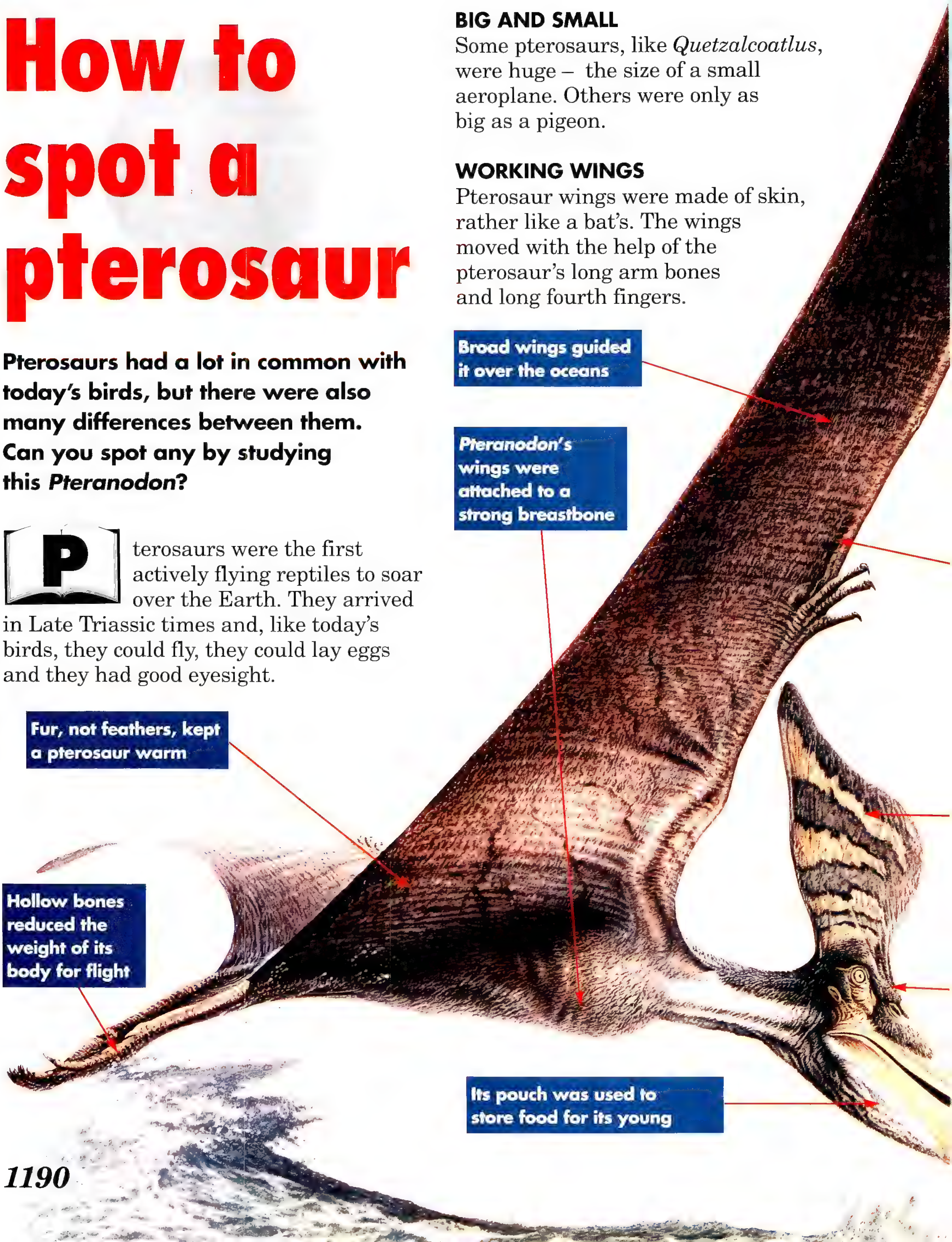
Pterosaurs were the first actively flying reptiles to soar over the Earth. They arrived in Late Triassic times and, like today's birds, they could fly, they could lay eggs and they had good eyesight.

BIG AND SMALL

Some pterosaurs, like *Quetzalcoatlus*, were huge – the size of a small aeroplane. Others were only as big as a pigeon.

WORKING WINGS

Pterosaur wings were made of skin, rather like a bat's. The wings moved with the help of the pterosaur's long arm bones and long fourth fingers.



Broad wings guided it over the oceans

Pteranodon's wings were attached to a strong breastbone

Fur, not feathers, kept a pterosaur warm

Hollow bones reduced the weight of its body for flight

Its pouch was used to store food for its young

HOLLOW BONES

Although *Pteranodon* weighed about 30kg, and had a wingspan of around 8m, it wasn't too heavy to fly. Like birds, it had hollow bones to make it light in the air.

TOOTH TRUTH

Unlike today's birds, most pterosaurs had teeth. By studying these teeth, scientists can tell what food these animals ate.

DIFFERENT TASTES

Pteradaustro was a pterosaur with long jaws and fine teeth for sieving tiny animals from the water. *Dimorphodon* had a big head with strong teeth and probably ate meat. *Pteranodon* had no teeth and may have scooped up tiny fish from the sea with its long beak.

Is it true that pterosaurs were warm-blooded reptiles?

Mammals and birds are warm-blooded, which means they make their own heat from the energy they get from food and can be active most of the time. Reptiles are usually cold-blooded. They have to bask in the sun to warm up. Although pterosaurs were reptiles, scientists think they were not cold-blooded because they were very active and because they also had fur, like other warm-blooded creatures.

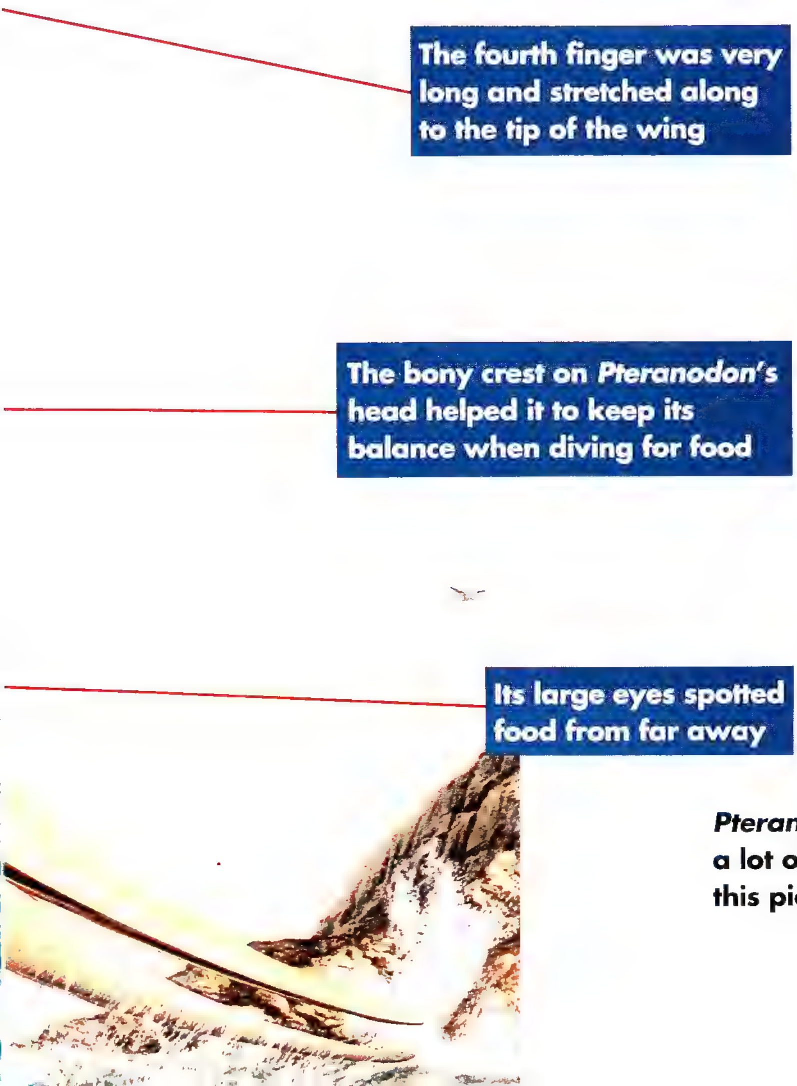
THROAT POUCH

Just like modern pelicans, *Pteranodon* had a throat pouch under its beak for storing food. It probably kept fish in the pouch to bring back to its young in the nest.

Today's pelicans catch food with their strong beaks and then store it in their pouches, just as *Pteranodon* did millions of years ago.

FURRY DISCOVERY

At first, people thought pterosaurs had feathers to keep them warm, like birds. But then some palaeontologists discovered pterosaur fossils with traces of hair imprinted in the rocks. They realised these animals had fur, not feathers.


The fourth finger was very long and stretched along to the tip of the wing
The bony crest on *Pteranodon's* head helped it to keep its balance when diving for food
Its large eyes spotted food from far away

***Pteranodon* (left) was a typical pterosaur. Although it had a lot of features similar to today's birds, a close look at this picture reveals the true identity of the pterosaurs!**

Introducing the first plant-eaters

The prosauropods were not only the earliest plant-eaters. They were also the first giant dinosaurs to roam the land.

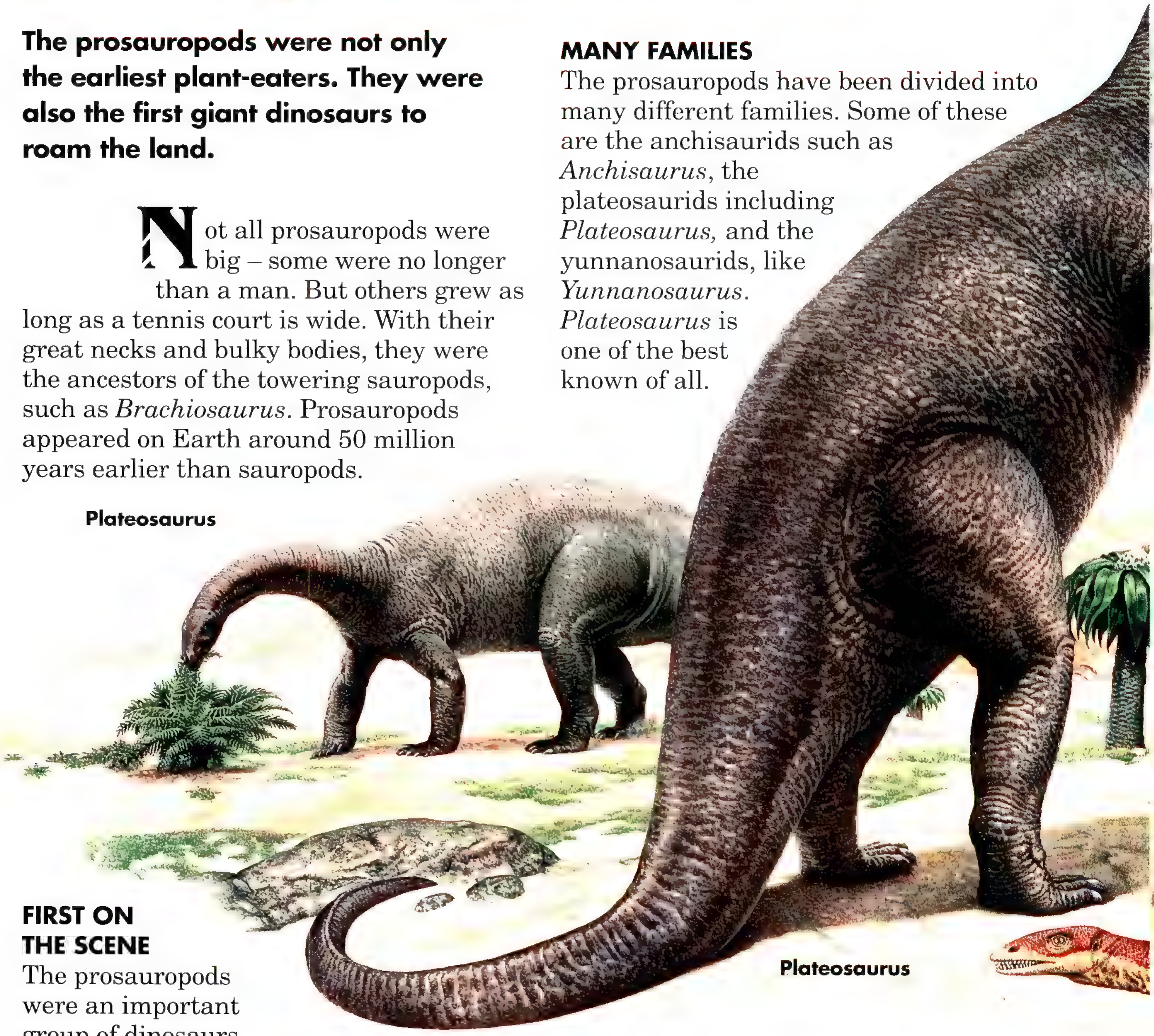
Not all prosauropods were big – some were no longer than a man. But others grew as long as a tennis court is wide. With their great necks and bulky bodies, they were the ancestors of the towering sauropods, such as *Brachiosaurus*. Prosauropods appeared on Earth around 50 million years earlier than sauropods.

FIRST ON THE SCENE

The prosauropods were an important group of dinosaurs, because they were the first long-necked plant-eaters. They were able to reach up and browse high in the tree tops.

MANY FAMILIES

The prosauropods have been divided into many different families. Some of these are the anchisaurids such as *Anchisaurus*, the plateosaurids including *Plateosaurus,* and the yunnanosaurids, like *Yunnanosaurus*. *Plateosaurus* is one of the best known of all.



Large numbers of *Plateosaurus* have been found in quarries in Germany, Austria and France, so we know most about this prosauropod.

Is it true

that the first *Anchisaurus* fossils were thought to be human remains?

Yes. The first fragments of *Anchisaurus* were found in 1818 and they were described as human bones. It was not until 1855 that experts realised they were dinosaur fossils. And it was in 1912 that they were finally identified as *Anchisaurus* fossils.

IN AT THE BEGINNING

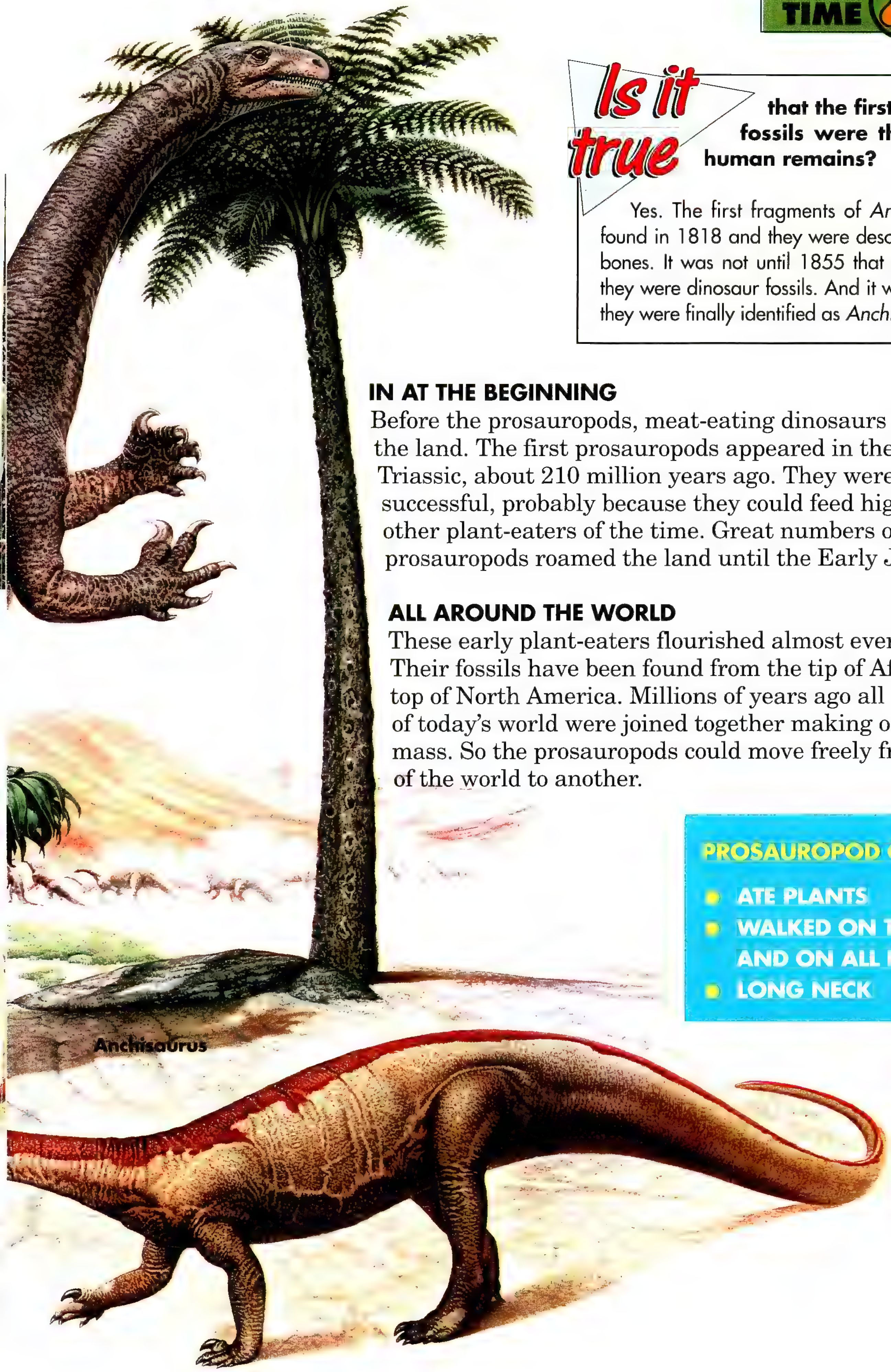
Before the prosauropods, meat-eating dinosaurs dominated the land. The first prosauropods appeared in the Late Triassic, about 210 million years ago. They were very successful, probably because they could feed higher than other plant-eaters of the time. Great numbers of prosauropods roamed the land until the Early Jurassic.

ALL AROUND THE WORLD

These early plant-eaters flourished almost everywhere. Their fossils have been found from the tip of Africa to the top of North America. Millions of years ago all the continents of today's world were joined together making one great land mass. So the prosauropods could move freely from one part of the world to another.

PROSAUROPOD CHECK LIST

- ATE PLANTS
- WALKED ON TWO LEGS AND ON ALL FOURS
- LONG NECK

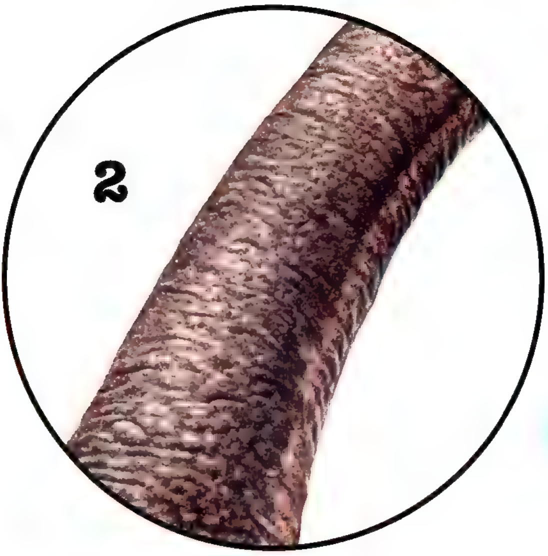


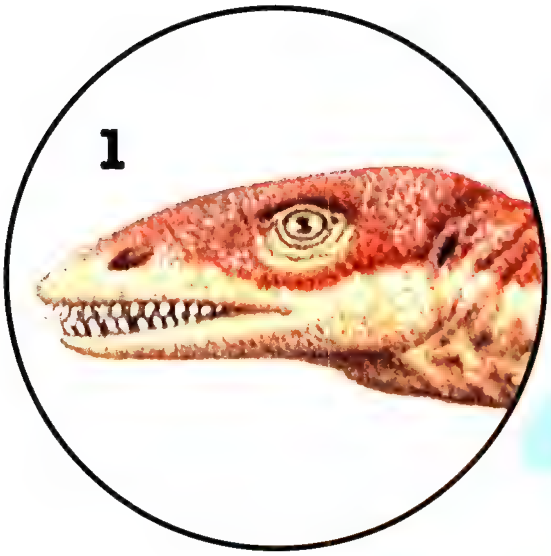
Anchisaurus

FOLLOW THE CLUES... ?

LITTLE AND LARGE

One of the earliest prosauropods was also one of the largest. *Plateosaurus*, which first appeared 210 million years ago, grew up to 7m long. The smallest was *Anchisaurus*, which arrived 10 million years later and was just over 2m long.





2 EAT UP

Prosauropods were the first plant-eaters to have long necks. Using its long tail as a support, a big *Plateosaurus* could have reared up to eat leaves from the tallest cycads and conifers. Its neck was not as long as the neck of a giant sauropod such as *Diplodocus*. But it was long enough to mean the dinosaur could feed far higher than short-necked plant-eaters living then.

1 PLANT-SHREDDER

Some experts believed prosauropods could have been meat-eaters because of the shape of their teeth. But most scientists now agree that these dinosaurs must have fed on plants. They noticed that the saw-like edges and spoon shape of prosauropod teeth were like those belonging to plant-eaters. *Plateosaurus* had a strong jaw and a powerful bite. It used its many small teeth to shred leafy twigs.

IT'S A FACT

COOLING NECKS

Some scientists believe prosauropods did not have long necks in order to reach food. They think that having a long neck cooled the dinosaurs' blood. A prosauropod neck could have helped to keep the body temperature at the right level and so stop the dinosaur from getting heatstroke!

3 CURVED CLAWS

Plateosaurus probably used its hands for support and defence. The dinosaur could have grasped things with its strong fingers. But the fingers could also bend backwards, like the toes of a foot, to rest on the ground. The powerful scythe-like claw on each thumb could have helped it to rake up low-growing plants. Or, the dinosaur might have lashed out with its claw to defend itself.

PROSAUROPOD CHECK LIST

- SMALL HEAD
- LONG TAIL
- BULKY BODY

4 IN AND OUT

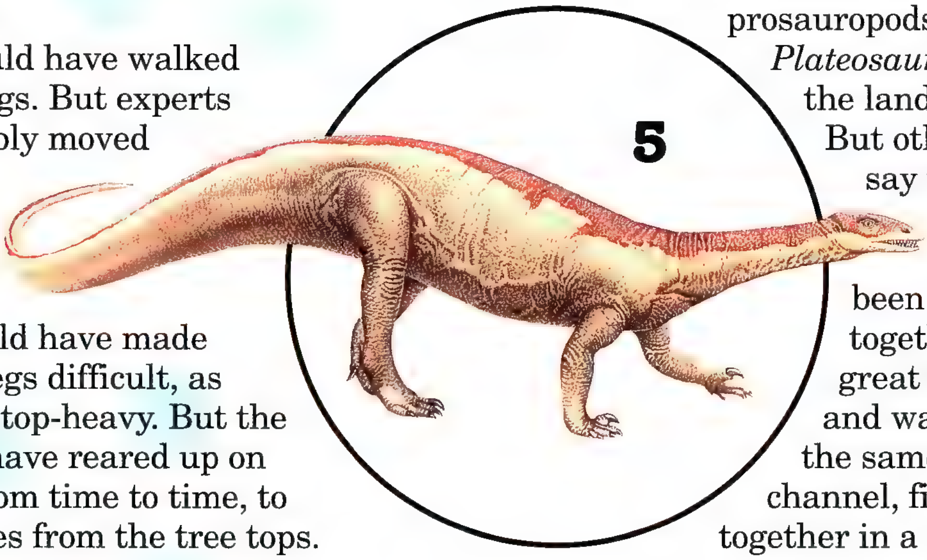
The long, heavy prosauropod tail may have been used for swimming. It was designed to move swiftly from side to side. So, it could have acted like a giant flipper to power a dinosaur through the water. Experts believe prosauropods were good swimmers.

SUDDEN DEATH

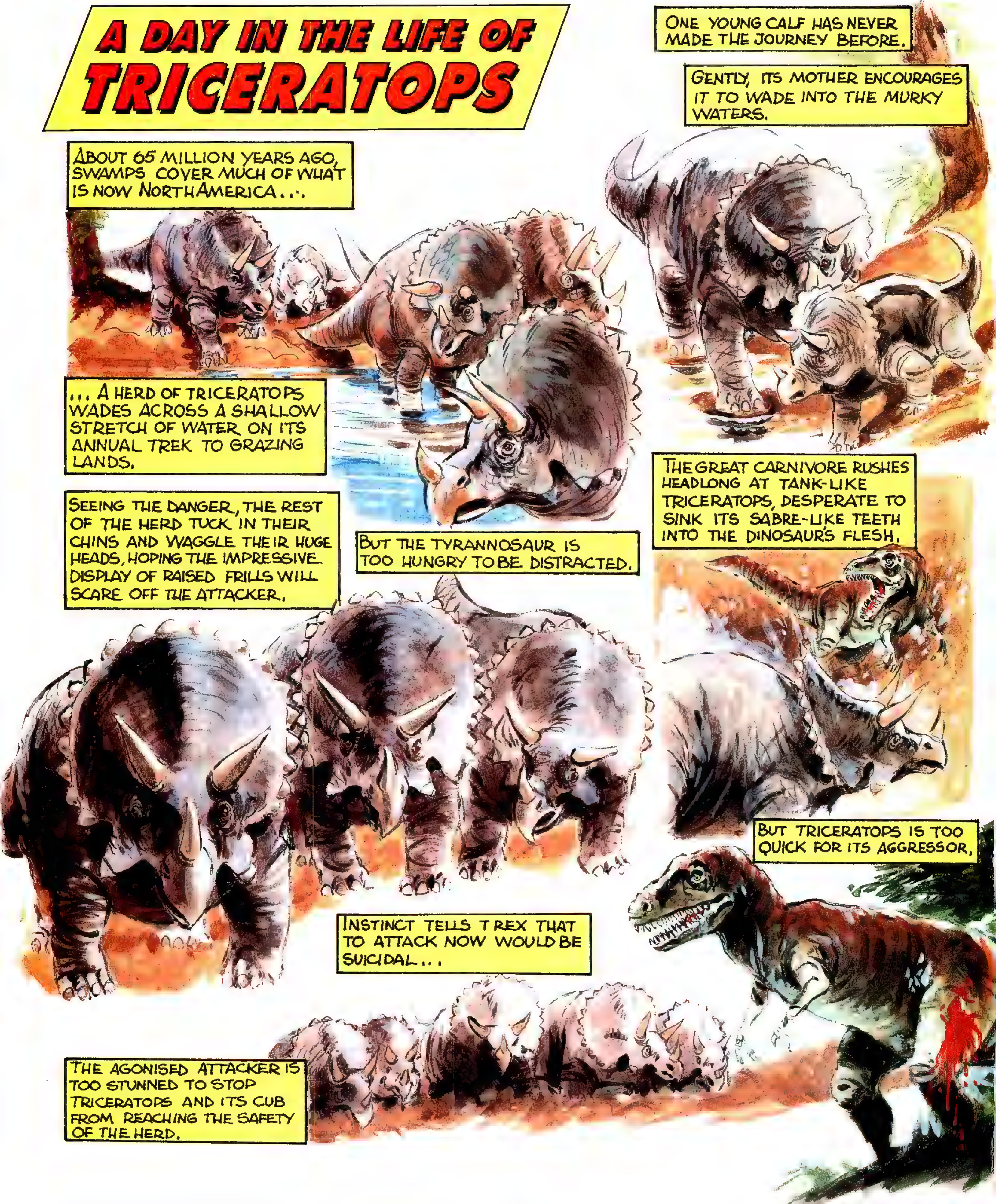
Large numbers of *Plateosaurus* have been found buried together. Some scientists think this is proof that prosauropods like *Plateosaurus* roamed the land in herds. But other experts say that lone dinosaurs may have been caught up together in a great flash flood and washed down the same flood channel, finishing up together in a great heap.

5 WALK TALL?

Prosauropods could have walked upright on two legs. But experts think they probably moved about on all fours most of the time. Their long necks and bulky bodies would have made walking on two legs difficult, as they were rather top-heavy. But the dinosaurs could have reared up on their hind legs from time to time, to snatch juicy leaves from the tree tops.



A DAY IN THE LIFE OF TRICERATOPS



ABOUT 65 MILLION YEARS AGO, SWAMPS COVER MUCH OF WHAT IS NOW NORTH AMERICA . . .

. . . A HERD OF TRICERATOPS WADES ACROSS A SHALLOW STRETCH OF WATER ON ITS ANNUAL TREK TO GRAZING LANDS.

ONE YOUNG CALF HAS NEVER MADE THE JOURNEY BEFORE.

GENTLY, ITS MOTHER ENCOURAGES IT TO WADE INTO THE MURKY WATERS.

THE GREAT CARNIVORE RUSHES HEADLONG AT TANK-LIKE TRICERATOPS, DESPERATE TO SINK ITS SABRE-LIKE TEETH INTO THE DINOSAUR'S FLESH.

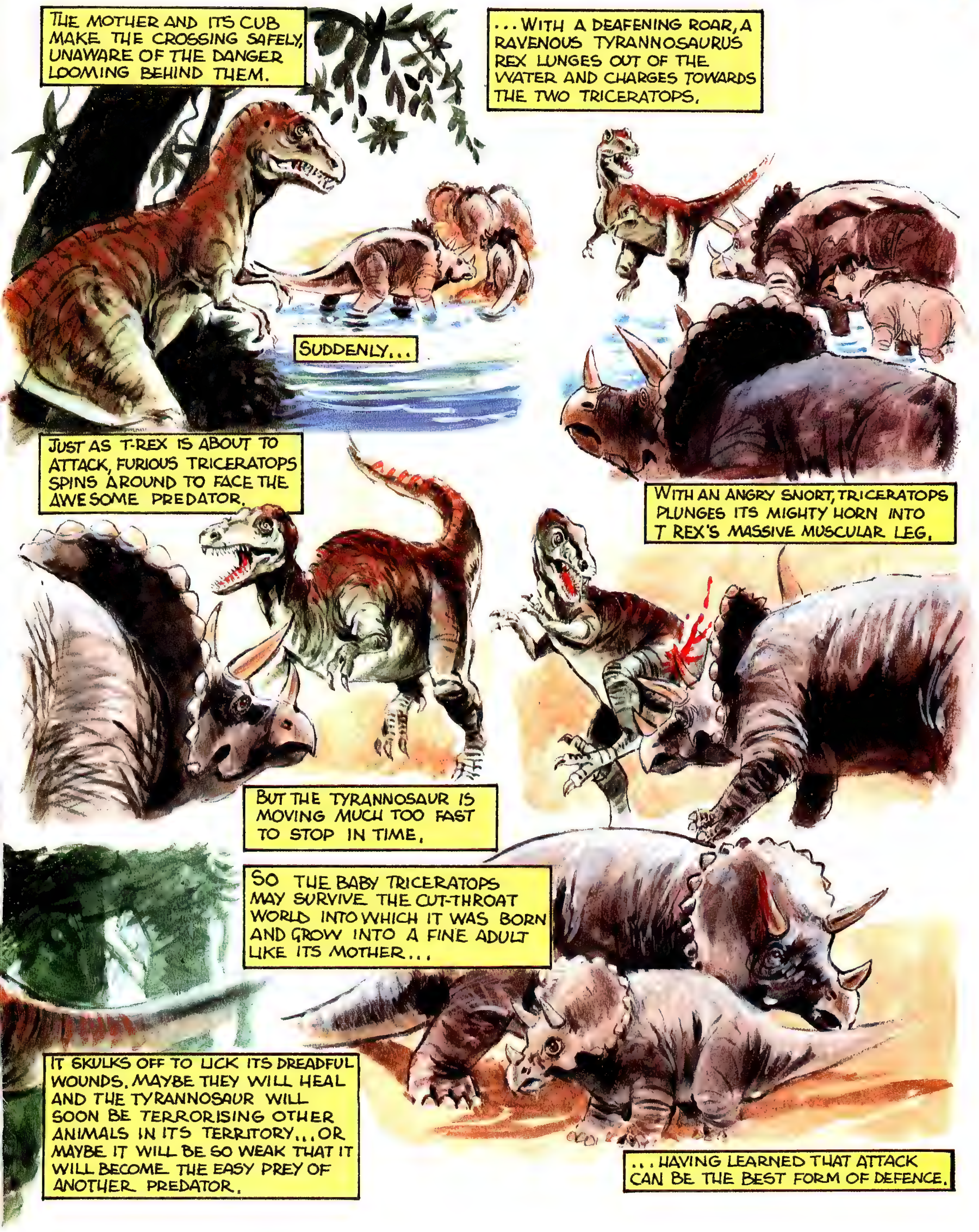
BUT TRICERATOPS IS TOO QUICK FOR ITS AGGRESSOR.

THE AGONISED ATTACKER IS TOO STUNNED TO STOP TRICERATOPS AND ITS CUB FROM REACHING THE SAFETY OF THE HERD.

SEEING THE DANGER, THE REST OF THE HERD TUCK IN THEIR CHINS AND WAGGLE THEIR HUGE HEADS, HOPING THE IMPRESSIVE DISPLAY OF RAISED FRILLS WILL SCARE OFF THE ATTACKER.

BUT THE TYRANNOSAUR IS TOO HUNGRY TO BE DISTRACTED.

INSTINCT TELLS T REX THAT TO ATTACK NOW WOULD BE SUICIDAL . . .


THE MOTHER AND ITS CUB MAKE THE CROSSING SAFELY, UNAWARE OF THE DANGER LOOMING BEHIND THEM.
SUDDENLY...
...WITH A DEAFENING ROAR, A RAVENOUS TYRANNOSAURUS REX LUNGES OUT OF THE WATER AND CHARGES TOWARDS THE TWO TRICERATOPS.
JUST AS T-REX IS ABOUT TO ATTACK, FURIOUS TRICERATOPS SPINS AROUND TO FACE THE AWESOME PREDATOR.
BUT THE TYRANNOSAUR IS MOVING MUCH TOO FAST TO STOP IN TIME.
WITH AN ANGRY SNORT, TRICERATOPS PLUNGES ITS MIGHTY HORN INTO T REX'S MASSIVE MUSCULAR LEG.
SO THE BABY TRICERATOPS MAY SURVIVE THE CUT-THROAT WORLD INTO WHICH IT WAS BORN AND GROW INTO A FINE ADULT LIKE ITS MOTHER...
IT SKULKS OFF TO LICK ITS DREADFUL WOUNDS. MAYBE THEY WILL HEAL AND THE TYRANNOSAUR WILL SOON BE TERRORISING OTHER ANIMALS IN ITS TERRITORY... OR MAYBE IT WILL BE SO WEAK THAT IT WILL BECOME THE EASY PREY OF ANOTHER PREDATOR.
...HAVING LEARNED THAT ATTACK CAN BE THE BEST FORM OF DEFENCE.

Improve and test your knowledge with...

FACT FILE

Fascinating facts to read and 10 fun questions to answer!

Picture this!

One of the first ever dinosaur illustrators was US pensioner Arthur Lake. Lake was a fossil finder during the last century who went on to teach geology. But it wasn't until he was 70 years old that he started to use his fossil knowledge to draw and paint dinosaurs.

1 ***Henodus*** **could be described as being like:**
- a) a floating frisbee
- b) a bouncy castle
- c) a slippery snake

2 Which of these is not a mollusc?
- a) a clam
- b) a slug
- c) a beetle

3 ***Tanystropheus*** **may have used its long neck:**
- a) to reach tree tops
- b) to fish
- c) to scare predators away

4 ***Montanoceratops*** **was named after:**
- a) a state in North America
- b) its neck frill
- c) a chocolate bar

5 ***Ultrasauros*** **means:**
- a) tiny reptile
- b) ugly reptile
- c) ultra reptile

6 Pterosaurs had:
- a) spots
- b) feathers
- c) fur

7 The bony crest on ***Pteranodon's*** **head helped it:**
- a) keep its balance
- b) look good
- c) fight other pterosaurs

8 Which of these dinosaurs was a prosauropod?
- a) *Diplodocus*
- b) *Velociraptor*
- c) *Anchisaurus*

9 ***Plateosaurus'*** **bite could best be described as:**
- a) wimpy
- b) powerful
- c) ticklish

Soon to become extinct?

Just as dinosaurs became extinct millions of years ago, about 120 different kinds of animals are threatened with extinction today. There are only about 100 giant pandas alive today and fewer than 3,000 Indian tigers. Both the blue whale and the white rhino are endangered too. Most of these animals have become threatened because of man.

T rex saves the world!

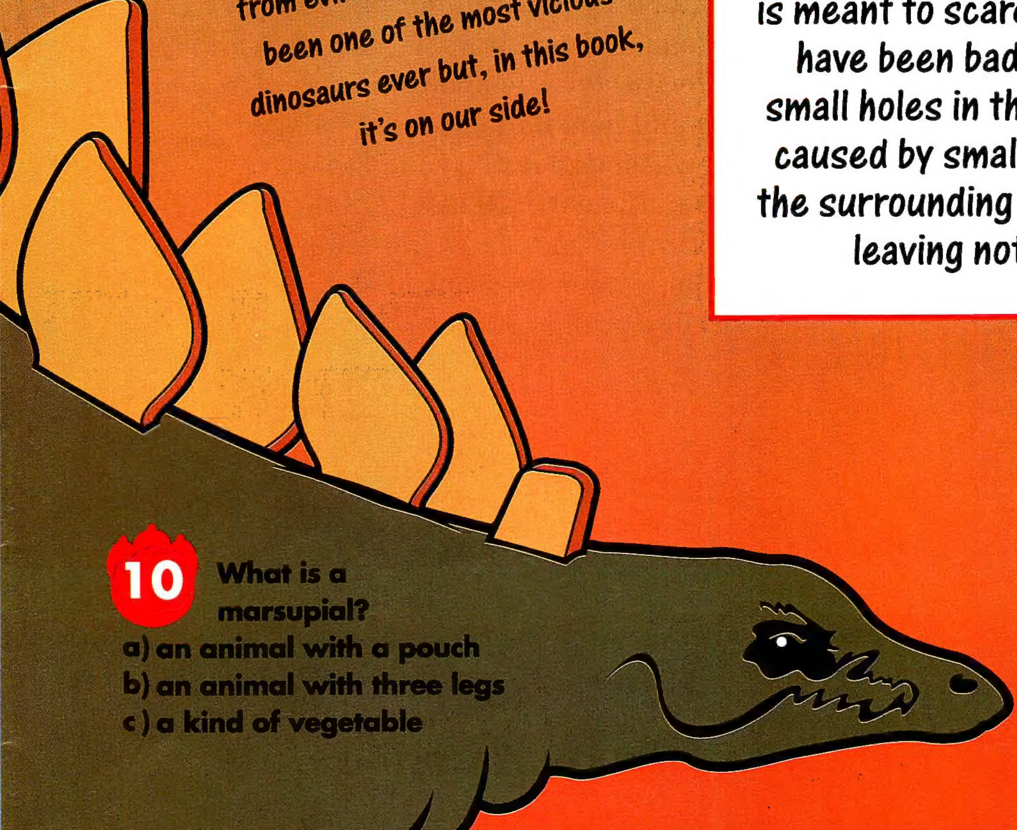
Dinosaurs have been stars of films, novels and exhibitions for years. T rex is one of the most popular dinosaurs and in 1929, it was made the hero of a book by Alexander Phillips, called 'Death of the Moon'. In the story, T rex saves the world from evil aliens! T rex may have been one of the most vicious dinosaurs ever but, in this book, it's on our side!

You can find fossils in the most unlikely places!

One of the strangest places in which fossils were discovered was in a limestone gargoyle on top of Notre Dame Cathedral in Paris, France! The fossils were probably embedded in the rocks that were used to make the gargoyle – an ugly carving which is meant to scare away evil spirits. Some gargoyles have been badly worn by the weather and have small holes in their surface. These may have been caused by smaller fossils which were softer than the surrounding limestone and may have dissolved, leaving nothing but holes in their place.

Snakes slither into existence!

As the Age of the Dinosaurs was ending, a new kind of legless reptile began to appear! It was the snake and it looked a bit like a modern python – a powerful snake that coils around its prey to suffocate it. Pythons and their relatives have small spurs – the last remaining evidence of the hind legs of their four-legged lizard ancestors.

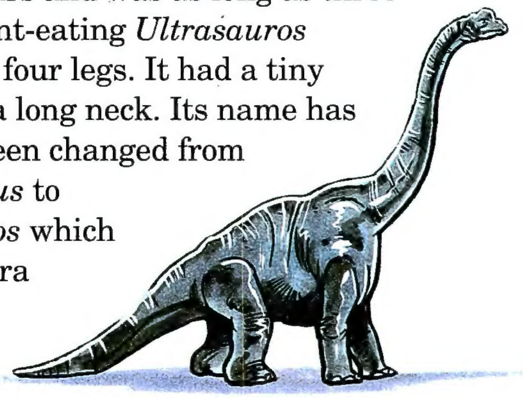


10 What is a marsupial?

a) an animal with a pouch
b) an animal with three legs
c) a kind of vegetable

ULTRASAUROS **145 MYA**

Heavier than 20 elephants, huge *Ultrasauros* (ull-tra-saw-ros) was found in Colorado, USA, in 1979. It was probably the tallest of all dinosaurs and was as long as three buses. Plant-eating *Ultrasauros* walked on four legs. It had a tiny head and a long neck. Its name has recently been changed from *Ultrasaurus* to *Ultrasauros* which means 'ultra reptile'.



UNQUILLOSAURUS **75 MYA**

Unquillosaurus (un-kill-oh-saw-rus) was found in Argentina, South America. It was a fierce meat-eater with a large head and huge jaws. *Unquillosaurus* grew to be longer than a coach and walked on two powerful legs.

V

VALDOSAURUS **120 MYA**

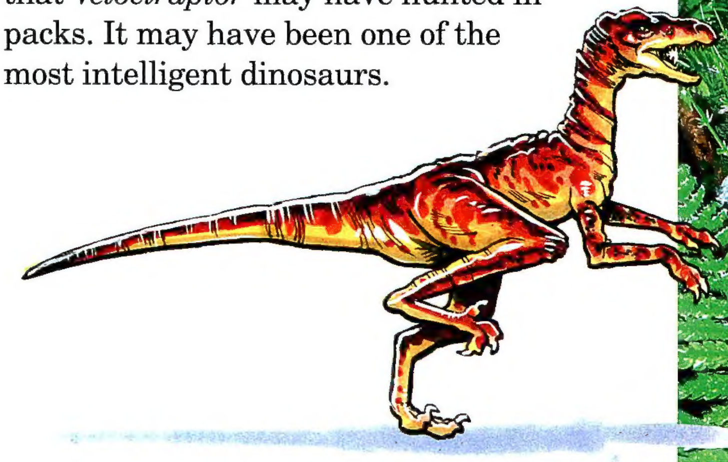
Only the thigh bone of this plant-eating dinosaur has been found. *Valdosaurus* (val-doh-saw-rus) means 'reptile from the Wealdon' after the area of England where it was found. *Valdosaurus* was about as long as a small rhinoceros.

VECTISAURUS **120 MYA**

Experts think some of the fossils of this plant-eater from southern England may really be those of *Iguanodon*. *Vectisaurus* (vek-ti-saw-rus) was as long as a car and able to walk on two or four legs. It lived in the Early Cretaceous and its name means 'Isle of Wight reptile', after the island off the coast of southern England where it was found.

VELOCIRAPTOR **75 MYA**

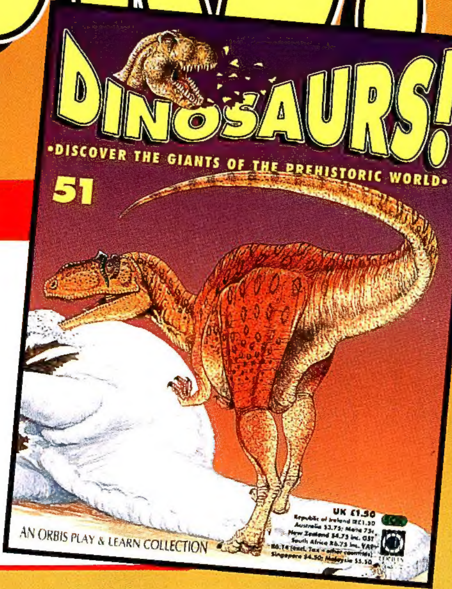
Velociraptor (vel-o-si-rap-tor) means 'speedy predator'. This fast and ferocious killer lived in the Cretaceous Period and chased small mammals and young dinosaurs. It had a long claw on each foot to stab at its victim. When it caught its prey, *Velociraptor* bent its low, narrow head and tore it apart with sharp teeth. *Velociraptor* was about the size of a large dog and held its tail out for balance as it ran. It was found in the Gobi Desert of Mongolia in the early 1920s. Experts think that *Velociraptor* may have hunted in packs. It may have been one of the most intelligent dinosaurs.



MYA = MILLION YEARS AGO

COMING IN PART 51 OF

DINOSAURS!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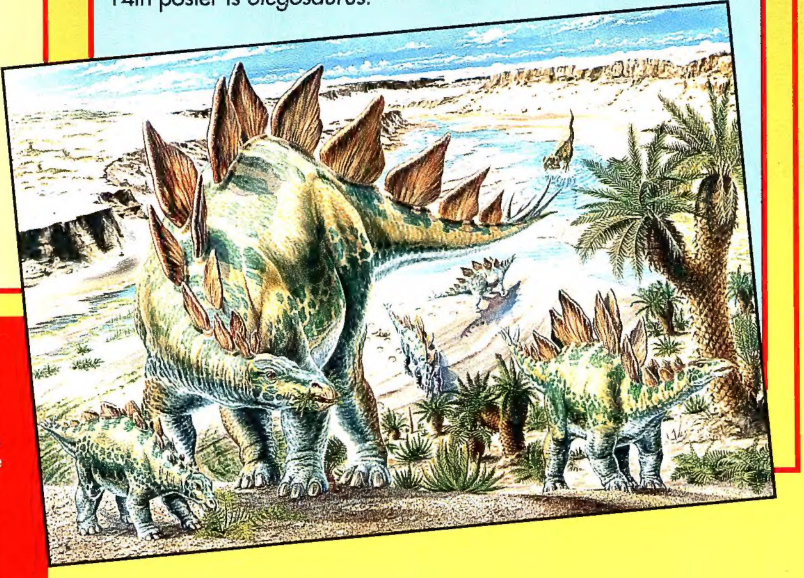
Have you ever wanted to fill your room with dinosaurs? Now you have your chance – with the *Dinosaurs!* POSTER COLLECTION. Each poster is 820 x 570mm (nearly eight times the size of this page) and features a superb dinosaur artwork. You'll find facts and figures about the dinosaur on the back – PLUS a look at some other prehistoric animals. The 14th poster is *Stegosaurus*.



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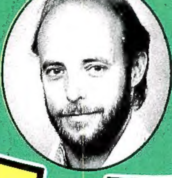
ANSWERS TO FACT FILE QUESTIONS: 1.a 2.c 3.b 4.a 5.c 6.c 7.a 8.c 9.b 10.a



Dr. David Norman of Cambridge University answers your dinosaur questions

ASK THE EXPERT

Why did mammals become so big after the dinosaurs died out?

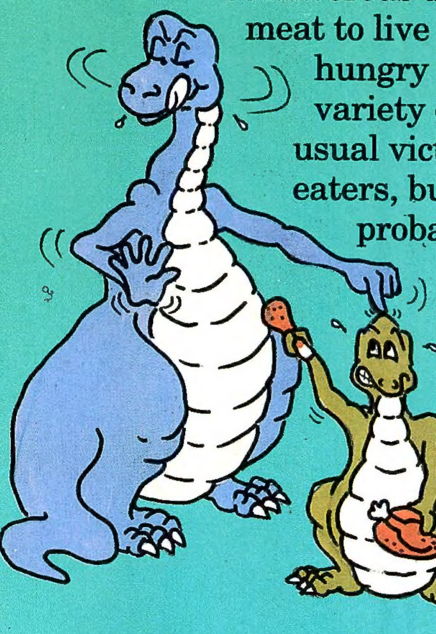
Once the dinosaurs had gone, there was a lot more room for mammals to flourish on Earth. Mammals replaced dinosaurs as the dominant plant and meat-eaters and they could grow as large as dinosaurs – although they looked very different! Most prehistoric mammals did not have the spectacularly long tails or necks of many of the dinosaurs, but they are still very exciting animals. Some large mammoths were just as big as sauropods if you compare the sizes of their legs and trunks.

Did dinosaurs make good parents?

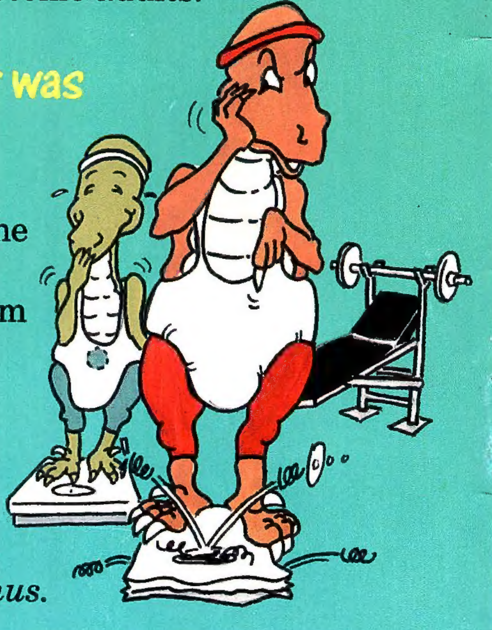
When it came to looking after their young, dinosaurs were probably like modern reptiles, mammals and birds. Some dinosaurs, like *Maiasaura*, may have spent a lot of time looking after their young, so their babies would have stood a good chance of surviving. Others might not have cared so much and instead relied on laying lots of eggs to be sure at least some babies survived to become adults.

Did meat-eating dinosaurs eat other meat-eating dinosaurs?

Yes, I think they probably did! Carnivorous dinosaurs needed meat to live and when they were hungry they preyed on a variety of animals. Their usual victims were plant-eaters, but hungry carnivores probably also turned on weak, meat-eating dinosaurs – grabbing the chance of a quick and tasty meal! There is even evidence of cannibalism in dinosaurs such as *Coelophysis*.



How much bigger was Utahraptor than Deinonychus?



As far as we know, the largest *Deinonychus* grew up to about 3.5m in length. The one specimen of *Utahraptor* that has been discovered has been estimated at 8m in length – twice the size of *Deinonychus*. *Utahraptor* would also have been much heavier and more powerful.

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